University of Glasgow
Faculty of Law and Financial Studies
Department of Accounting and Finance
Ph.D. in Management Control Systems

PMERS, Environmental Uncertainty, & Managerial Behaviour:

An Empirical Investigation of the E-V Theory of Motivation in the Organisational Setting

Submitted in fulfillment of the degree of Doctor of Philosophy in the University of Glasgow

Supervisor : Professor Clive R. Emmanuel

Student : Georgios N. Kominis

Sessions : 1997-2002

Glasgow, February 4th, 2002

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

"To my father I own my being ; to my teacher, my well-being"

Alexander the Great

Acknowledgements

I wish to express my profound gratitude and sincere appreciation to my supervisor Professor Clive Emmanuel at the University of Glasgow, my "captain", for his support and direction throughout this four-year journey.

I would also like to take this opportunity to thank the following :

Maria, my fiancé, for her patience with my prolonged hours of work and my anxiety, for having shared all good and bad moments in Glasgow for three years, but, above all, for keeping her faith in me at times of despair.

The Department of Accounting & Finance and the Faculty of Law & Financial Studies of the University of Glasgow, as well as the CIMA Research Foundation for their generous financial support, without which this doctoral study would not have been possible.

The Human Resources Director of Bank Sigma who allowed me access to the organization for the data-collection requirements of the study, as well as the two managers from the Bank's Management Development Division, for assisting me both with the planning, pilot-testing, and administration of the questionnaire survey, and with the composition of the case study.

My colleagues at the 24th EAA Annual Congress 2001 (Athens University of Economics and Business), the 6th Interdisciplinary Perspectives on Accounting (IPA) Doctoral Colloquium 2000 (University of Manchester), the MCA May 2000 Meeting (King's College, London), the BAA / ICAEW Doctoral Colloquium 2000 (University of Manchester), the ICAS / BAA Accounting & Finance Scottish Doctoral Colloquium 2000 (University of Glasgow), the ICAS Doctoral Colloquium 1999 (Edinburgh), the ICAS / BAA Accounting & Finance Scottish Doctoral Colloquium 1999 (University of Glasgow), the 4th International Management Control Systems (MCA) Doctoral Colloquium 1998 (University of Reading), and the BAA Doctoral Colloquium 1998 (University of Lancaster), for their useful feedback and comments on the various parts of the research presented in these venues.

Particularly Noor, for her smile.

Last, but by no means least, I would like to extend my appreciation, specifically to Mrs. Veda Smillie, for her help, support, and 'motherly' advice whenever I needed it, and generally to all the members of staff at the Department of Accounting and Finance of the University of Glasgow for always being warm, helpful and available during my five-year stay in Glasgow.

Abstract

The contribution of Management Control Systems (MCS) in general, and of the Performance Measurement Evaluation and Reward System (PMERS) in particular, to the motivation of the managers who operate at the middle level of the organisation's hierarchy has received relatively little examination up to date. Most of the available empirical evidence in the area of measurement, evaluation and reward of managerial performance tends to focus almost exclusively on executive managers operating at the top level. Using an Expectancy-Valence (E-V) model of job behaviour as a theoretical framework, this study primarily sets out to investigate the impact of the PMERS on middle-level managers' motivation and subsequent performance. At a second level, it aims to examine the relative success of the PMERS to positively influence managerial motivation and performance under all environmental conditions, both certain and uncertain.

By means of an analytic questionnaire - which was purposively developed on the basis of instruments previously tested and extensively used in practice by other researchers in the field - a sample of 225 middle-level managers from a large UK-based financial institution provided data for the study. All in all, the analysis of the managerial perceptions gathered regarding the company's PMERS indicate that the managers' motivation is primarily affected by the extrinsic and intrinsic rewards that they perceive to enjoy in the context of their job environment. Motivation is specifically related both to the perceived value and to the performance-dependency of these rewards. The latter seems to suggest that a key issue affecting the motivational effectiveness of the PMERS - and therefore a central design consideration - is the choice of rewards to be included in the company's reward package, as well as the manner through which these rewards are eventually allocated to the company's managerial staff. As to the intervening effect of perceived environmental uncertainty, this research provides evidence to show that the managers' perceptions about how uncertain their (internal and external) job environment is have a significant adverse impact on their perceptions about the accuracy of the performance measures and the attainability of the performance standards that are employed within the PMERS. This result implies that the design of the company's PMERS is better seen as situationally specific, i.e., as contingent on the relevant (actual and perceived) conditions of the organisational environment for which it is intended.

Table of Contents

List of Abbreviations

MCS	: Management Control System
PMERS	: Performance Measurement Evaluation & Reward System
EU	: Environmental Uncertainty
TU	: Task Uncertainty
M	: Motivation
P	: Performance
EV	: Value of Extrinsic Rewards
IV	: Value of Intrinsic Rewards
(E→P)	: Expectancy about the Attainability of Performance Standards
(P→EP)	: Expectancy about the Accuracy of Performance Measures
(EP→ER)	: Expectancy about the Dependency of Organisational Rewards

Chapter One :

Introduction

1.1 Identification of the Research Area

Management control theorists have consistently pointed out the motivational potential of the Performance Measurement, Evaluation & Reward System (PMERS) to influence and direct the behaviour of managers who are operating at the middle level of the organisational hierarchy. In practice, systems of performance measures, standards and related rewards may be used by organisations not only for control but also for motivational purposes, i.e., in order to induce middle-level managers to perform at desirable levels. Indeed, incentive systems which attempt to link organisational rewards to managerial behaviour on the basis of some pre-specified criteria of attained performance have become a common - if not a necessary - ingredient of managerial remuneration packages in the 1990s, and this trend appears to be growing (Otley, 1992, 1994). Nevertheless, surprisingly little evidence exists on the effects of such incentive systems on the managers' behaviour in the different environments they are implemented, despite the concerns expressed by contingency theorists about the ability of these systems to instigate managerial motivation and promote managerial efficiency equally well under all environmental conditions, both certain and uncertain.

The purpose of the present study is to fill this research void in part, by empirically investigating the relative motivational effectiveness of the PMERS under differing environmental conditions. Essentially, the objective of this study is twofold : First, to examine the impact of the Performance Measurement, Evaluation and Reward System (PMERS) on middle-level managers' behaviour (motivation and performance), and, second, to examine the moderating effect of environmental and task uncertainty on the PMERS's ability to affect managers' motivation and subsequent performance. Deriving from a contingency theory perspective, the research question that is addressed in this study is - what is the actual impact of the PMERS on the motivation and consequent performance of middle-level managers who are operating within environments of differing level of uncertainty ? Environmental uncertainty - in all its shapes and forms - is viewed and examined here as an important source of contingency for the design and subsequent motivational effectiveness of the company's PMERS.

1.2 Objectives and Contribution of the Study

Using the above notions as a frame of reference, and adopting right from the start a micro-behavioural perspective of analysis, this research ambitiously sets out to investigate and evaluate in practice, the role that systems of managerial performance measures and related incentive schemes are alleged to play in the motivation of middle-level managers who may operate under different environmental conditions. In essence, the prime objectives of this study are

1) to develop a theoretical framework within which the process of motivation through the company's Performance Measurement Evaluation and Reward System (PMERS) can be adequately conceptualised and understood, and then, on the basis of this conceptual vehicle,
2) to formulate and test a number of hypotheses about
   i) the impact of the PMERS on
      - the middle-level manager's motivation
      - the middle-level manager's performance
   ii) the intervening effect of environmental uncertainty on the above relationship(s).

All in all, if we accept the importance of managerial motivation in today's complex organisations, the contribution of the present research can effectively be seen, first, in the conceptualisation and empirical examination of the phenomenon of managerial motivation through the company's formal PMERS and the identification of all the critical PMERS-related factors that are seen to directly influence the manager's motivation and performance, and second, in the appreciation of the presumed impact of environmental uncertainty on the eventual motivational effectiveness of this PMERS.

It is essentially this understanding of the processes and dynamics involved in the influence and direction of managerial behaviour in the performance evaluation and reward context that is thereby hoped to allow the generation of some useful insights and recommendations particularly relevant to the design and implementation of a PMERS that is expected to fulfil its motivational potential in all the environments that is put to use.

1.3 Organisation of the Thesis

Central to the present research endeavour is the realisation that control is fundamentally a behavioural issue, and that the ultimate criterion by which any system of control (such as the PMERS) should be assessed is behavioural (Emmanuel et al., 1990) ; that is, to what degree does such a system succeed in influencing managers to behave in desirable ways, from the organisation's point of view. As such, a review of the - empirical and theoretical - literature in relation to the allegedly significant motivational function of performance measures and related incentive schemes is given in chapter 2. The chapter is specifically concerned with the theoretical and practical considerations associated with designing of a motivationally effective system of measures, standards of performance and related rewards, as well as with the functional or dysfunctional consequences that different design choices can instigate to the managers' behaviour. Furthermore, the literature addressing the potential impact of the organisation's environmental context in general, and of the environmental uncertainty variable in particular, on the design and subsequent motivational effectiveness of the PMERS is also reviewed in chapter 2.

In pursuit of an adequate conceptual and operational definition of motivation, the third chapter of this dissertation reviews the most influential motivational theories in the field of applied organisational psychology and, based on the Expectancy / Valence Theory, develops a theoretical framework that brings together the four main variables under investigation in this study - that is, i) the PMERS, ii) managerial motivation, iii) managerial performance, and iv) environmental uncertainty. On the conceptual premises of this theoretical model of managerial behaviour, a number of testable hypotheses concerning a) the alleged impact of the PMERS on the middle-level manager's motivation and performance, and b) the intervening effect of perceived environmental uncertainty, directly on the PMERS, and indirectly on the middle-level manager's work motivation, are derived.

In order to examine the aforementioned hypotheses, an empirical study was undertaken. Chapter 4 presents the method and methodology that was employed in the present research in order to collect the necessary data and conduct the testing of these hypotheses. Apart from the specific anaphora to the study's underlying philosophical and methodological orientation, a detailed account of the research design and of the particular research method utilised for the data-collection purposes of the study is given. Overall, this is a positive study of a multidisciplinary character, which brings

together principles and concepts from the related, though distinct, areas of management control theory and applied organisational psychology. As a result, it has been based on the well-established body of existing empirical literature in these two fields, and on a previously developed and well-tested survey methodology to operationalise and measure its dependent, independent, and intervening variables. Methodologically speaking, these choices have not only rendered the present study with a relatively high level of internal and construct validity, but also have increased its comparability with a considerable body of relevant literature.

The steps taken, first, to identify, and then to achieve the full co-operation of a corporate partner who would be willing to participate in the given research project by providing access to its managerial staff for the data-collection requirements of the study are described in chapter 5. The main emphasis, however, of this chapter is on the detailed description and analysis of the company's Performance-Measurement-Evaluation-Reward System (PMERS), although some peripheral background information on the organisation's profile, business environment, corporate strategy, and organisational structure are provided, mainly to enable the reader to recreate the relevant context within which the findings of the study are later presented and interpreted. In effect, the participant company is a UK-based financial institution amongst the top 8 of the UK banking sector, with over 300 years of experience to the provision of financial services in the community, and more than 21,000 staff in its workforce.

Chapter 6, and the accompanying figures, tables and appendices, report the results of the statistical analysis (descriptive and inferential) conducted on the data obtained with the questionnaire survey. Descriptive statistics on the sample of the 225 managers surveyed, as well as a diagnostic analysis of the company's Performance-Measurement-Evaluation-Reward-System on the basis of the managers' responses to the questionnaire, are firstly presented. Subsequently, the hypotheses posed in the research are tested. The statistical testing of the designated hypotheses is carried out here in two different ways - i.e., through correlation coefficients that allow to assess relationships among variables, as well as through tests that are useful in detecting mean differences between sub-samples -, and at two levels - parametric and non-parametric. In sum, the obtained findings seem to indicate, first that at least some of the managers' perceptions about given PMERS characteristics have a strong, positive, and significant relationship with managerial motivation, and second that perceived environmental uncertainty has a significant adverse effect on some of

these PMERS-related perceptions that appear to impact on the manager's motivation and subsequent performance.

Lastly, chapter 7 draws together the findings of the empirical study and the literature review, first in order to highlight the study's contribution to the existing body of knowledge in the area of management control, and then to draw some implications both on a practical, as well as on a more theoretical and methodological level. Although no attempt is made to put forward a universally 'best' system design that can apply and operate equally well to all organisations in all circumstances, a number of recommendations with regard to the contingent design characteristics of the company's reward package and overall PMERS are made. The need to consider in the process of designing a PMERS that is intended for control and motivational purposes, i) the environmental uncertainty variable and its effect on the PMERS perceived characteristics, and ii) the individual differences / preferences factor and its importance for the perceived value and overall relevance of the company's reward package, is specifically underlined. Finally, chapter 7 closes by indicating some future research avenues and extensions.

Chapter Two :

Theoretical Background & Literature Review

2.1 Introduction

In this second chapter, an overview of the existing relevant literature in the area of measurement, evaluation and reward of managerial performance is provided, with special reference to the significant role that performance measures and related incentive schemes are alleged to play in the motivation of managers. The chapter basically consists of three sections of literature review. The first two sections, that follow right after this introductory part, discuss the importance of the human factor in contemporary organisations, and the critical role of human behaviour and motivation in the viability, growth, and development of these organisations. In the third section, an attempt is made to discuss both the theoretical and the practical considerations associated with the design of a motivationally effective system of measures, standards of performance and related rewards. The final sections of the chapter address the potential impact of the organisation's environmental context in general, and of the environmental uncertainty variable in particular, on the design and subsequent motivational effectiveness of such systems.

2.2 The significance of human behaviour for organisations

The concept of organisation has always symbolised the efficient, effective and rational allocation of resources for task accomplishment. Formally defined, organisations can be usefully seen as social arrangements that are concerned with the efficient use of available scarce resources for achieving controlled performance in the pursuit of collective goals (Buchanan & Huczynski, 1997). The decision regarding the optimal amalgam of financial, physical and human resources, that combine to determine the organisation's overall performance and its consequent growth, development, and eventual survival, has long concerned both managers and scholars in the field. The present research endeavour is intended to focus on the human, behavioural aspects associated with such concerns, and particularly with the intricacies of managerial motivation and behaviour in complex, contemporary organisations. This study also concentrates on utilitarian organisations in Etzioni's (1961) use of the term. With utilitarian organisations we refer here to commercial organisations which base their operation and survival on written and unwritten contracts with individuals that undertake certain commitments to advance organisational purposes in return for negotiated rewards (Emmanuel et al., 1990). In contrast to normative organisations where organisational members are morally committed to commonly accepted aims (moral involvement), and coercive organisations where a dominant group determines organisational action by imposing its will on other participants through power and coercion (alienative involvement), in utilitarian organisations there not necessarily any common interests or agreed goals, instrumental involvement on the part of the members is the norm, and therefore the examination of the various control and motivation schemes - that are basically employed to ensure that the critical activities for the organisation's success will be carried out - presents added interest.

A definition of motivation is called for at this point. Within the previously delineated organisational context, the term can be adequately defined as the social process through which some members of the organisation try to influence other members, to work harder, work smarter, work more effectively (Buchanan & Huczynski, 1997). Organisations as social arrangements are dependent on being able to motivate people to join up in the first place, to stay with the organisation, and to perform at acceptable levels. Katz and Kahn (1966) rightly indicate that an organisation has the potential to remain viable only so long as its members choose to participate and engage in necessary role behaviours. They particularly make mention of three behavioural requirements that need to be fulfilled in order for an organisation to be effective, namely that

1. people must be attracted to join and further remain in the organisation
2. people must perform the tasks for which they are hired and must do so in a dependable manner, and
3. people must go beyond this dependable role performance and engage in some form of creative, spontaneous and innovative behaviour in their work environment.

In a similar manner, March and Simon (1958) emphasise the fact that for any organisation to be effective, they must come to grips with the motivational questions of what stimulates human behaviour, particularly with regard to the individual's decisions

1. to join and remain within an organisation, and
2. to put forth energy and effort at the rate and direction demanded by the organisation.

As Steers and Porter (1979) point out, given the ever-tightening constraints placed on organisations by an increasingly competitive, rapidly changing, unstable and, thus, uncertain environment, management has to look for new mechanisms that can increase its level of organisational effectiveness. As they characteristically put it (1979, p.4) "...organisational effectiveness becomes to some degree a question of management's ability to motivate its employees to direct at least a reasonable effort toward the goals of the organisation". In the same vein, Lawler (1994) agrees that the ability to influence the motivation of employees is a crucial factor in the effective management of any organisation. And although he does not provide an explicit definition of 'organisational effectiveness', he goes as far as to support that if we are ever to have effective organisations, we must understand how to encourage effective individual behaviour.

All in all, there seems to be not much ground for disagreement with Emmanuel et al. (1990), that organisations consist of people, and can act only insofar as people within them choose to act. The way individuals behave within organisations is universally regarded as critical, not only for the effectiveness but also for the very existence of these organisations. It comes as no surprise, therefore, that organisation managers and management theorists alike are very much interested in theories of human motivation, in the hope that they will discover means of encouraging employees - and indeed other managers - to work competently and generally act in a loyal, committed, flexible and innovative manner when appropriate.

2.3 Control and Motivation at the Middle Management Level

A number of authors in the area of management control have repeatedly emphasised the criticality of the middle-level management for the overall effectiveness and eventual survival of contemporary organisations. Merchant (1989), for example, points out that within the decentralised setting, middle-level managers (also found with a variety of alternative labels such as company-, sector-, group-, division-, unit-, or area-managers) are given substantial authority to initiate, make, or approve many actions that bear significant consequences both to their business units and to the company as a whole. On the planning-strategic level, being in the right position to possess the most detailed and accurate predictive models, middle-level managers are expected to play a substantial, if not decisive, supporting role in operationalising the existing and shaping the future business strategy of their unit, assisting top management with strategic decisions such as where growth should occur and how it should be achieved. On the operational-administrative level, having been delegated the appropriate control and responsibility over local operating decisions, middle-level managers are required to use their judgement, intuition, innovation and skill in order to make prompt evaluations of the present circumstances, and timely decisions that will render their unit and - as a result - the entire company more responsive to the market's ever-changing demands (Emmanuel et al., 1990) ; they are also expected to effectively mediate and manage the natural conflicts among the business functions in their unit ; and they are the central figures in making the decisions about the critical trade-offs between current and future performance in their unit (Merchant, 1989). In a similar tone, Otley (1994) asserts that in the current rapidly changing and highly unpredictable business environment, the vital responsibility for the mechanisms of organisation adaptation cannot be left anymore to a small team of senior managers who develop organisational strategies that will be enacted by others ; rather the 'management of change' increasingly requires the active involvement of lower level managers, who, via their 'empowerment' in the context of the contemporary organisation, are delegated sufficient authority and responsibility for operational, day-to-day decisions and, at the same time, are encouraged to contribute to strategic thinking in a bottom-up approach that centres around the notions of flexibility, fast adaptation, and continuous learning. To the extent, therefore, that, as Donaldson (1984) cautions, "...companies succeed or fail in their economic functions at the divisional [middle] level" (p.144), the form and nature of the control systems and processes that organisations put into action to make sure that these managers consistently act in the organisation's best interest, as well as the critical success or failure of these systems to essentially

promote this organisationally desirable (functional) behaviour, are issues that warrant special attention and deserve close examination.

Merchant (1989) insightfully argues that most often the control of middle-level managers is indirect, in the sense that it involves motivation. His argument is that the critical distance of the organisation's top management from the realities of each individual area / product market within which each unit operates, as well as the consequent information asymmetry that inevitably exists as a result of this distance between top- and lower-level management, makes the direct monitoring and control of the actions of middle-level managers expensive and, occasionally, infeasible. In practice, all companies resort to some kind of system of performance measures, standards, and related organisational rewards to "...motivate their [middle-level] managers towards effective performance" (Emmanuel et al., 1990, p.81). Despite, however, the widespread recognition that the success or failure of these performance measurement evaluation and reward systems (henceforth PMERS, and otherwise referred to as 'motivational contracts', in Merchant's (1989) terminology) to effectively motivate managers in the middle and lower level of the organisational hierarchy is strictly connected with the organisation's overall success and survival, little empirical evidence exists about the form or efficacy of these systems in practice (Ehrenberg & Milkovich, 1987). This study aims to fill this research void in part. Adopting a micro-behavioural perspective of analysis, that is, by basically concentrating on the individual middle-level manager rather than on an organisational or a societal level, it intents to posit and empirically test hypotheses about the presumed impact of the three main PMERS elements (i.e., performance measures, standards and related rewards) on middle-level managers' motivation and performance.

2.4 Managerial motivation and the design of the Performance-Measurement-Evaluation-Reward System (PMERS)

2.4.1 The motivational potential of the PMERS

Management Control Systems (MCS), and Performance Measures and related Reward Schemes in particular, are alleged in the literature to have the potential to influence significantly the behaviour of managers who operate at the middle level of the organisation's hierarchy (Gordon, 1964 ; Hopwood, 1974 ; Thomas, 1980 ; Merchant, 1989). Indeed, according to many management theorists (e.g. Lawler & Rhode, 1976 ; Anthony, 1988 ; Simons, 1995) the central function of any

management control system - as well as one of the major aims of the Performance Measurement Evaluation Reward System (PMERS) - is motivation, that is, to induce individuals to behave in ways which contribute to the overall organisational effectiveness. Macintosh (1994) makes the point that management control systems have a lot more to do with the direction of managers' and employees' behaviour than they do with providing accurate, neutral, and factual accounting data to rational, utility-maximising decision makers. In the same theoretical vein, Merchant (1989, p.10) adds that the major challenge of any MCS is to motivate middle-level managers, "to mobilize their hearts, minds, and energies...so as to ensure that they act consistently in the corporation's best interest".

On the whole, there seems to be a general consensus in the management accounting and control literature that, systems of measures, standards of managerial performance and related rewards constitute the main organisational device, the principal means that organisations employ in order to elicit and direct desirable human behaviour at the middle-management level. Particularly in the case of the modern, complex, commercial organisation, where top management is notably limited in its ability to directly monitor and control the middle-level managers' actions - basically owing to its critical distance from the individual business units and the resulting information asymmetry -, control at the middle management level means to a large degree motivating by linking organisational rewards to the level of performance achieved, i.e., promising rewards for good results (Emmanuel et al., 1990).

2.4.2 The Principal-Agent Model (PAM) : Motivation issues and the role of contracts

Agency Theory in general and the Principal-Agent Model (PAM) in particular provide a useful theoretical framework within which the behavioural dimension of the PMERS and its contribution to the control and motivation of middle-level managers can be adequately understood. The particular model provides the conceptual ground for examining the pivotal role that management control processes (such as systems of performance measures and related incentive schemes) can play in mitigating underlying motivational problems and subsequent inefficiencies within firms made up of self-interested individuals (Baiman, 1990). All in all, the principal-agent model of the firm is fundamentally structured upon a description of individual behaviour within a multiperson organization (Baiman, 1982), and around the major premise that the answer to all kinds of management control issues lies on achieving a commonality of interests between

principals and their agents. It thereby takes the organisation of the firm - including the allocation of tasks and ownership rights - as given and concentrates on the choice of *ex-ante* employment contracts between rational principals and agents, operating in a world of uncertainty and information asymmetry (Emmanuel & Mehafdi, 1994). As such, within the PAM's research agenda special emphasis is typically given on understanding how agency problems arise and how they can be mitigated by contractual design, and more generally, by organisational design. In essence, the latter constitutes PAM's primary subject matter (Baiman, 1990).

The principal-agent model asserts that an agency relationship is a contractual relationship that exists whenever one party (the principal, or the company's top management in our case) engages another party (the agent, or the middle-level manager here) to perform some service on his behalf in an uncertain environment. These contractual relationships (otherwise stated as employment relationships) among the members of the firm are of vital importance within the PAM. More specifically speaking, within the context of this branch of the agency theory, the firm is viewed not as an unit but rather as "a nexus of contracts between self-interested individuals" (Merchant & Simons, 1986, p.188), as an overlapping set of contractual relationships among the principal(s) who 'hires' the agent(s) for the purpose of delegating authority and responsibility, in order for the latter to perform some task (Baiman, 1982). Both the principal and the agent are assumed to be rational wealth seeking utility maximisers, motivated solely by their self-interest, whereas, in addition, the principal is assumed to be risk-neutral and the agent risk- and work-averse (i.e., to prefer leisure to work) (Emmanuel & Mehafdi, 1994). The rights and responsibilities of these members of the firm are specified in the firm's mutually agreed upon employment contracts, which are considered to be optimal functions of the information supplied by the firm's management control and information system (Baiman, 1982) and which, furthermore, have the role of bringing the conflicting objectives of the principal and agent into equilibrium (Alchian & Demsetz, 1972 ; Kren & Liao, 1988). In this sense, the behaviour of the firm within the PAM is seen as "...the outcome of the process that brings into equilibrium via the agreed upon contracts the conflicting self-interests of the principals and agents" (Baiman, 1982, p.156). Overall, the application of the PAM in the particular context of the present study, and the network of agency and contractual relationships between top management (principals) and middle-level management (agents) is as shown in Figure 2-1.

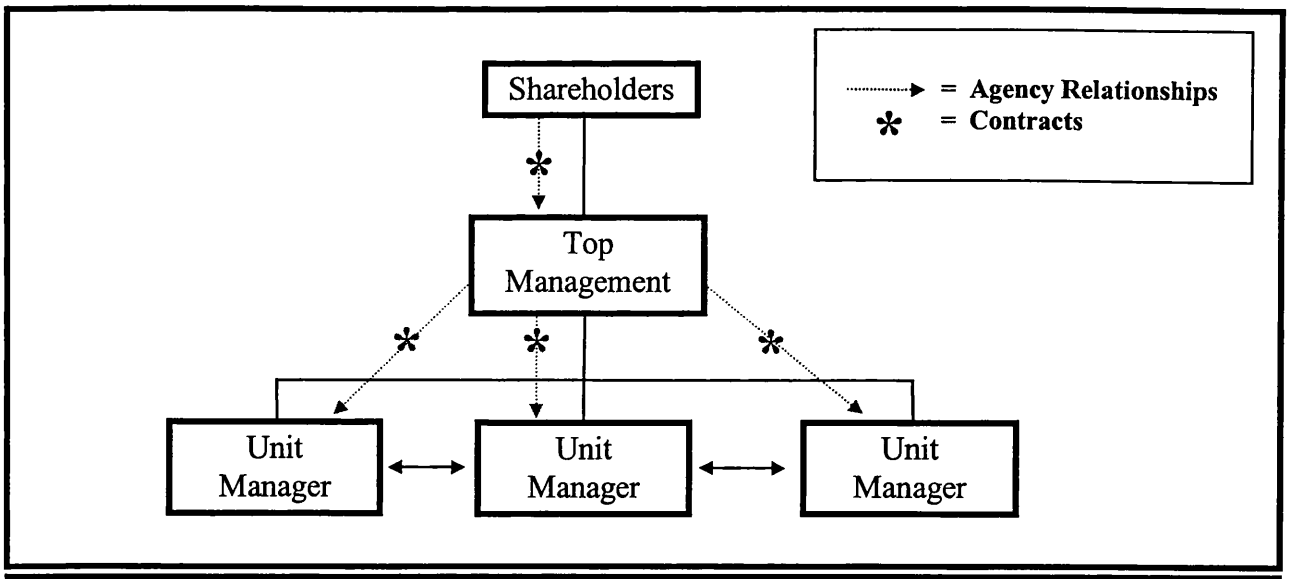


Figure 2-1 : Agency and Contractual Relationships between Top- and Unit-Level Management

Efficiency problems within the theoretical framework of agency theory are assumed to arise when the cooperative behaviour - which is held to maximise the group's welfare - is not consistent with each individual's self-interest. Cooperative behaviour stems from the realisation by the firm's individual members - both principals (top management) and agents (middle-level management) - that each individual's welfare is contingent upon the success of the firm as a whole, and that such firm's success is strictly connected with the level of cooperation among the members of the firm. Ideally, as Fama (1980, p.289) argues, "the firm can be viewed as a team of individuals whose members act from self-interest, but realise that their destinies depend, to some extent, on the survival of the team in its competition with other teams". However, given that within the principal-agent model each individual's actions are theorized to be endogenously derived, solely based on his own self-interest, when the individual can make himself better off by deviating from the agreed, cooperative behaviour (while at the same time everyone else is acting cooperatively), he must certainly be expected to do so. When the employment relationships (the contracts) are such that, while everyone else exercise the - mutually agreed upon employment - cooperative behaviour, one or more individuals can make themselves better off by deviating from this cooperative behaviour (i.e., when the cooperative behaviour is not consistent and self-enforcing (Baiman, 1990)), then the following chain-reaction of events is likely to occur :

1. One or more individuals - solely urged from their own self-interest - will deviate from the cooperative behaviour, then

2. other individuals in the group will also find it in their best interest to deviate accordingly from the cooperative behaviour.
3. The end result, from this divergence between self-interested and cooperative behaviour, is that the whole group will suffer a loss of efficiency and, eventually, all individual members of the group will potentially be made worse off.

In effect, according to the PAM and Agency Theory three are the critical factors - the prime sources of agency problems in Baiman's (1990) terminology - that *prima facie* account for inefficiency effects within organizations : the agent's work-aversion, his risk-aversion (together reflecting the *per se* divergence of interests between the principal and the agent), and the presumed information asymmetry. These factors are essentially regarded as the main underlying reasons typically preventing the cooperative solution from being achieved. In Baiman's (1990) words, "...it is information asymmetry and agent work-aversion and risk-aversion [i.e., the agent's self-interested behaviour] that prevent the simultaneous achievement of the cooperative allocation of risk and the cooperative level of production" (p.341), and that effectively contribute to the incurrence of additional agency costs (both financial and non-financial) that could otherwise be avoided.[1]

Of primary importance to the solution of the above motivational problems is the role of contracts - both written and implicit - as the main expression of the contractual (employment) relationships within the PAM, which basically aim at bringing the conflicting interests of middle-level and top managers in alignment with the owners' interests. More specifically, within

[1] In the utilitarian organisations of interest, the agency relationship is clearly not cost-free (Emmanuel & Mehafdi, 1994). The relevant agency costs are defined here as "the sum of the costs of the incentive compensation plan, the costs of monitoring the manager's actions [unavoidable costs] and the remaining costs of actions taken by managers that diverge from the preferences of the owners [avoidable costs]" (Kaplan, 1982, p.568). More specifically, unavoidable (necessary) costs refer to the costs that are bound to be incurred in order to prevent the agent from diverging from his / her contractual obligations to the principal, and essentially include expenses such as the cost of the contract itself, the wages, the cost of constructing systems of performance measurement, evaluation and reward, in general, all the costs incurred for designing, administrating, reviewing and adjusting the formal control mechanisms that attempt to integrate the principal's interests with the agent's interests. Avoidable costs, on the other hand, refer to the costs that result from the perceived and covert divergence of the agent's actions from his / her contractual obligations, and basically include the losses to the principal whose interests are hindered by the non-neutral actions of the agent. Emmanuel and Mehafdi (1994) remark on the assumption that avoidable and unavoidable costs appear to have a reciprocal relationship, in the sense that the existence of avoidable costs leads to the revision of unavoidable costs. Conversely, avoidable costs can be potentially minimised or even eliminated if the unavoidable costs result from properly and initially designed contracts, suitable performance measurement evaluation systems and appropriate incentive schemes. Hence the critical role of the PMERS in the avoidance of additional agency costs within the PAM.

the context of the principal-agent model, the term contract refers both to the explicit (written) agreement between the principal and the agent, and to the implicit bargaining process over outcomes, ways of measuring and evaluating performance, as well as the resulting pay-offs (Fama & Jehnsen, 1983). As such, contracts can be found to include : management control and information systems, performance measures and standards, compensation schemes, allocation of duties and allocation of ownership rights (Baiman, 1990). The contract is also assumed to involve some degree of delegation of decision-making authority from the principal (top management) to the agent (middle-level manager), who will be compensated for the service performed. The existence of the contract essentially presupposes that the agent possesses private, superior and, presumably, costly information concerning his immediate internal and external environment which the principal lacks (that is, the assumption of information asymmetry previously discussed, asymmetry that basically results from the critical distance of the principal from the agent's task environment). As such, the main rationale behind the establishment of the contractual relationship between the principal and the agent, is that the agent, in possession of this information, is in a better position to make the best possible decision, provided that he is motivated to do so. By shifting therefore the locus of operating decision-making power further down the hierarchy (i.e., the element of decentralisation), and at the same time offering inducements to elicit the agent's decision-making and action-taking contribution (that is, the element of incentive), the principal is assumed to seek to place the decision-making authority close to the realities of the market place, i.e., closer to where and when the information is generated, so that :

1. to reduce risk and uncertainty
2. to reduce inefficiency by preserving timeliness and encouraging entrepreneurship (Emmanuel & Mehafdi, 1994).

To sum up, the framework proposed by Agency Theory and the PAM provides the ground "...for analysing the interaction of self-interested individuals within an economic context ; understanding the determinants and causes for the loss of efficiency created by the divergence between cooperative and self-interested behaviour (i.e., the loss from agency problems) ; and analysing and understanding the implications of different control mechanisms for mitigating the efficiency loss caused by the agency problems" (Baiman, 1990, p.342). Within the particular framework of analysis, the concept of contract holds a prominent position. In essence, in the context of the principal-agent model, the contracting relationships - in particular, the design of optimum

contractual arrangements - are seen as fundamental in bringing the conflicting interests and objectives of the principal and the agent into equilibrium, and control thereby becomes primarily a matter of ensuring that contracts are carried out, and of renegotiating their (the contracts') content whenever necessary (Emmanuel et al., 1990).

Nevertheless, one has to note that both the principal-agent paradigm and the closely related theory of contracts within the particular framework are presented with a lack of conceptual depth and theoretical clarity as regards human behaviour and the nature of man. To start with, managers' motivational structures are clearly not as simple and monolithic as to allow an alignment of interests as readily and as easily as the PAM suggests. As Hopwood (1974) insightfully points out, "...the final impact of the attempts to influence managerial behaviour...must always be seen as an uncertain outcome of a dynamic interplay between the administrative, social, and personal pressures which are simultaneously competing for influence and control" (pp. 22-23). Generally, any approach that emphasise elements of the formal administrative structure of the enterprise at the expense of the prevailing individual characteristics and the patterns of social interaction within the organisation, can be realistically criticised to provide a narrow and parochial analysis of the complex process that gives rises to human behaviour in the organisational setting. In addition,

(i) the exclusive - almost obsessive - emphasis of the PAM and of the broader socio-economics model on external positive interventions and reinforcements (most usually in the form of monetary incentives) for extrinsic work motivation (e.g., Becker, 1976 ; Stigler & Becker, 1977 ; Shapiro & Stiglitz, 1984 ; Akerlor & Yellen, 1986 ; Hart & Holmstrom, 1987 ; Stiglitz, 1987 ; Coleman, 1990 ; Frey, 1992, 1997),

(ii) their proposed - rather limited - view of people as

- selfish utility maximisers (the agent is assumed to act in such a way that maximises his own personal utility, subject to constraints primarily imposed by income and time) (Becker, 1993)
- opportunists (the agent is expected to take active efforts to minimise work, if that is believed to lead to the maximisation of his / her utility) (Williamson, 1975)
- egoistic wealth maximisers (the agent is taken to be mainly - if not wholly - interested in material values only) (Frey, 1997),

(iii) their inattention to other 'inner feelings' and 'intrinsic motivators' that may trigger, direct and sustain human behaviour, either independently or together with the extrinsic incentives available, as well as

(iv) their inability to recognize the 'individual differences' factor, i.e., the fact that different people have different needs, reward preferences and personal circumstances at any given point in time, and are therefore likely to desire, value, and be motivated by different (extrinsic and / or intrinsic) aspects of their job,

render these models essentially inadequate to fully conceptualise and investigate the phenomenon of work motivation through the company's management control systems.

An alternative, much wider framework of analysis that addresses more comprehensively the above management control and motivation issues is developed and presented in chapter 3.

2.4.3 Motivational Contracts for Middle-Level Managers

Perhaps inspired by agency theory, Merchant (1989) uses the term 'motivational contract' to refer to the motivational function of the PMERS within the organisational setting, and considers that any motivational contract consists of three necessary - though not individually sufficient - elements :

i) a definition of one or more *measures of performance* that identify the areas / dimensions that are essential for the organisation's success, and assess the individual's performance in each of these areas,

ii) a description of the *standards of performance* that define the organisationally desirable level of performance in all these essential areas, and distinguish between deficient, acceptable, and superlative individual performance, and

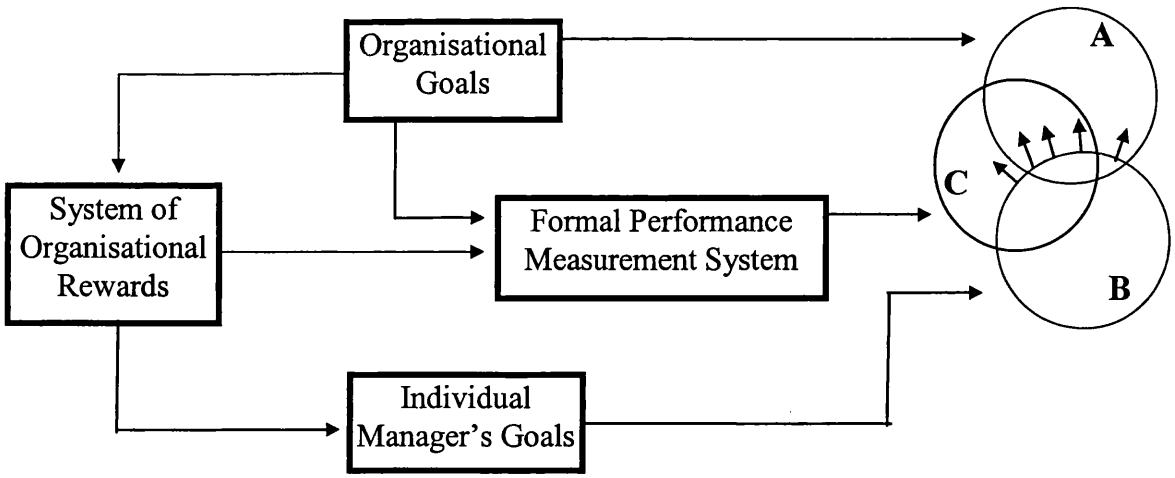
iii) an explication of the process through which the *organisational rewards* (and *penalties*) are administered to the individual on the basis of his / her accomplishment of the predetermined performance targets on the identified performance measures, so as to urge him / her towards such accomplishment.

In general, the PMERS - typically defined as a formal control mechanism that seeks to integrate the overall company's objectives and the interests of the company's middle- and lower-level

managers (Emmanuel & Mehafdi, 1994) - has traditionally been presumed to affect managers' motivation and performance in the following manner (Gordon, 1964 ; Thomas, 1980) :

1. Middle-level managers desire certain rewards that top management can provide them with (e.g., esteem, increased perquisites, salaries, bonuses, promotions, etc.).
2. Top management establishes a number of performance measures that are expected to reflect accurately the decision making capabilities of the middle-level manager, and to detect possible inefficiencies on his / her part.
3. Middle-level managers are led to understand - either implicitly or explicitly - that the receipt of these desirable rewards will be positively correlated with their performance and / or the performance of their divisions, as these are measured by the performance measures established. It is essentially this linking of the achievement of measured, desirable results with incentives for managers that aims to motivate middle-level managers to attain the performance targets that have been set, i.e., to ensure not only that they will be induced to exert greater effort but also that their effort will be expended in the desirable - from the organisation's viewpoint - direction.
4. Middle-level managers are then left to maximise their self-interest by attaining or surpassing the performance standards set by top management, improving simultaneously the performance of their divisions and, eventually, the performance of the overall company.

Hopwood's (1973 ; 1974) classic representation of the contribution of the PMERS to the motivation of managers illustrates in more detail the mechanics through which a system of properly designed performance measures, carefully set performance standards and desirable rewards can influence managerial behaviour.



A : Aspects of behaviour which are necessary for achieving wider organisational purposes.
B : Aspects of behaviour which managers are likely to concentrate on, in fulfillment of their personal goals.
C : Behaviour formally measured by management control systems.

Source : Hopwood, A.G. (1973), "An Accounting System and Managerial Behaviour", Saxon House Ltd.

Figure 2-2 : The Measurement-Reward Process

Essentially, Hopwood (1973) adopts a rational, goal-directed, self-interested, utility-maximising model of man and thereby maintains that in the absence of any organisational system for relating individual efforts to organisational rewards, the aspects of behaviour that individual managers are likely to concentrate on in fulfilment of their personal goals (B) do not, generally, correspond with those necessary for achieving the organisation's goals (A). This axiomatic conflict of interests and goals between the self-interested middle-level manager and the organisation (Porter et al., 1975) can nevertheless be bridged through the provision of additional incentives by the organisation to the middle-level managers, essentially through the written and unwritten promise of rewards for expected results. The 'goal (in)congruence' problem (Drury, 1996) can allegedly be resolved by the organisation if accurate measures / drivers of desirable managerial performance (C) - abstracted from the top management's conceptions of the overall organisational purposes - are constructed, and further linked to the receipt of desirable rewards. The assumption is that, to the extent that the organisational rewards offered are attractive enough to offset other incentives

middle-level managers have to act contrary to the organisation's best interest, and the related performance measures constructed can reflect perfectly what is required to achieve the organisation's wider objectives, the middle-level manager's behaviour (B) will be guided (motivated) by his / her desire to optimise his / her performance with respect to those performance criteria (C) so as to obtain the rewards that he / she needs and wants, thereby improving the performance of his / her unit (A) and, eventually, that of the overall company (Hopwood, 1974).

In effect, this classical view of the contribution of the PMERS to the influence of managerial behaviour centres around the concept of goal congruence. Goal congruence, in any process or system (such as the PMERS), refers to the confidence that the actions the system leads people to take in accordance with their perceived self-interest, are also in the best interest of the organisation (Anthony & Govindarajan, 1998). From this perspective, the central behavioural function - as well as the main design consideration - of the PMERS is

- to identify a comprehensive set of organisational goals that can adequately capture and reflect organisational success
- to make sure that the goals of the individual members of the organisation are, as far as feasible, consistent (or congruent) with the goals of the organisation, i.e., to ensure that individuals within the organisation (such as middle-level managers) are induced to act in such a way so that when they seek their own personal goals, they help to attain, at the same time, the organisation's goals, as these are prescribed by the PMERS itself.

Within the concept of goal congruence, the emphasis is basically on a set of mutually beneficial and, therefore, agreed goals - agreed by and beneficial to both the organisation and the individual middle-level manager. These agreed targets (standards of desirable performance) - supposedly able to embody all the dimensions of managerial behaviour that are necessary for the accomplishment of the organisation's overall objectives -, together with organisation rewards (incentives) that are presumably highly desirable to middle-level managers, can be seen as the primary solution to the problems of

- aligning the individual manager's self interest with the organisational, corporate objectives,
- persuading managers to exert higher levels of effort towards the accomplishment of these objectives,
- improving thereby managerial, unit, and organisational performance.

2.4.4 Breaking down the ideal PMERS-design : The role and nature of optimal motivational contracts

Otley (1987a) argues that "the design of an effective management control system requires three main issues to be resolved. First, what are the *dimensions of 'good' performance* and how are they to be measured ? Secondly, what are *appropriate standards for performance* and how are they to be established ? Thirdly, how are *rewards* (or *penalties*) to be linked to results ?" It is essentially the design choices made in relation to these three primary elements (i.e., measures, standards, and rewards) which determine whether or not the PMERS's features fit well with each other and with the given environmental, technological, organisational, strategic, and cultural context of the company, and come eventually to decide the overall effectiveness of the system to affect positively managerial motivation and performance within the organisation.

In practice, not all systems of performance measures and related rewards appear to be equally effective in their motivational function. Merchant (1989) contends that some of them fail as a result of inherent weaknesses in their design ; others may not work well within the given environmental conditions that the organisation has to operate. It is therefore of some significance whether the PMERS is appropriately designed and implemented to fulfil its potential contribution to managerial motivation and control to the utmost. With the emphasis on the motivational role of the system, the following sections address the main PMERS-design issues, exploring the relevant theory and empirical research on each of the three primary elements (performance measures, standards, and rewards) of the PMERS.

2.4.4.1 Performance Measures

Performance measures are an indispensable part of the PMERS in that they provide an operational definition, a basis for the measurement of the manager's actual performance, that can be compared further in the process with what is desired, expected or hoped for by the organisation. Merchant's insightful analysis on ideal motivational contracts (1989) specifies two essential qualities for performance measures that are expected to serve their motivational role to the utmost :

a) they must be controllable, and

b) they must be accurate.

The prescription that performance measures should reflect only what the managers can control is widespread in the management control literature. As Emmanuel et al. (1990) point out, the logic behind the responsibility-controllability management axiom is disarmingly simple : a manager should be held responsible for only the activities which he / she alone can control. To the extent possible, the distorting effects of non-controllable, exogenous factors, such as changes in material costs and economic conditions, or shocks of random events need to be isolated and filtered out, so that the measures are solely responsive to the individual manager's actions (Magee, 1986). In addition to the element of controllability, optimally designed performance measures for motivational purposes ought to be accurate, that is, objective and complete (Lawler, 1976 ; Lawler & Rhode, 1976). In order to have any discernible positive impact on managers' motivation, measures should be regarded by the managers themselves not only as independently verifiable and free of any personal bias (the element of objectivity), but also as capable of capturing and reflecting all relevant actions and behaviours (the element of completeness).

The underlying logic behind all the above prescriptions for accuracy and controllability lies in the understanding that for any performance measure to have motivational properties, it must be accepted by those it is supposed to motivate as a fair and relevant indicator of their performance. When the selected performance indicators lack either accuracy (i.e., they are considered inappropriate to faithfully capture the whole range of the manager's real contribution) or controllability (that is, they are deemed to hold the manager accountable for the effects of factors that he / she cannot control), they are likely to be regarded by the manager as uninformative of the effectiveness of the actions that he / she has taken, and the performance evaluations made on the basis of these indicators as poor and, therefore, unfair. In that sense, companies that implement such measures in order to evaluate and further reward the performance of their managers are bound to bear the alternate costs associated with the managers' frustration, consequent loss of motivation, dysfunctional behaviour, and, probably eventually, the non-retention of their managerial force (Vancil, 1979 ; Merchant, 1989).

Porter et al. (1975) emphasise the fact that an individual's reaction to being evaluated and rewarded on the basis of a particular measure is very much determined by how much he feels that he can affect the measure by his behaviour, i.e., how much control he feels he has over the measure. Essentially the whole issue here about the perceived controllability of measures centres

around the - much documented in the literature of management control - principle of reciprocity between responsibility and controllability, and its practical implications. The basic idea behind this principle is, in Horngren's words, that "there should be no responsibility without control" (1982, p.147). In practical terms, the latter means that when surrogate measures are used for the evaluation of a middle-level manager's performance, only the factors that the manager has under his complete day-to-day control and influence should be considered. If the purpose is to evaluate the divisional manager, then only those variables directly controllable by the manager should be included in the performance measure. To the extent that other items beyond the manager's control are incorporated in the measurement process, the measures are destined to be deemed non-controllable by the manager, and therefore of little - if any - positive motivational use. In such circumstances, dysfunctional behaviour on the part of divisional management - who may engage in a range of undesirable activities classified in the literature as 'smoothing' (that is, the altering of the timing and flow of data without changing the underlying transactions being reported), 'biasing' (i.e., transmitting only data that are perceived to be favourable), 'focusing', 'gaming', 'filtering', 'falsifying', etc. (Birnberg et al., 1983 ; Simons, 1995) in order to manipulate actual performance or reports of actual performance, - can only be seen as a rational reaction to the imperfect performance measures used (Emmanuel & Otley, 1985). There is an abundance of examples of managers embarking on non-neutral activities in order to 'beat' a perceived unfair control mechanism, particularly when significantly valued rewards are attached to this control mechanism (see, for instance, Argyris, 1952, 1964, 1971a, 1990 ; Ridgway, 1956 ; Berliner, 1961 ; Dearden, 1962, 1969 ; Mumford & Banks, 1967 ; Hofstede, 1968 ; Lowe & Shaw, 1968 ; Schiff & Lewin, 1968 ; Likert & Seashore, 1968 ; Pettigrew, 1970 ; Hopwood, 1972, 1973 ; Merchant, 1985, 1990 ; Umapathy, 1987 ; Simons, 1989 ; Keller, 1989 ; Bruns & Merchant, 1990 ; Holloway, 1990 ; Simons & Weston, 1990 ; Yin, 1992). It is on these behavioural grounds that a number of management control theorists argue strongly for the use of separate measures that make clear the distinction between the individual performance of the manager and the economic performance of his / her unit (e.g., Solomons, 1965 ; Samuels, 1970 ; Thomas, 1971, 1980 ; Amey & Egginton, 1973 ; Shillinglaw, 1977 ; Horngren, 1982 ; Emmanuel et al., 1990 ; Drury, 1996). It has nevertheless to be noted that implementing the responsibility / controllability principle in practice is not a simple task. In the real, complex and uncertain world, where there are only a few factors that are under the absolute and exclusive influence of a single person, the task of determining which elements are truly controllable by a given manager and which are not becomes

insurmountable (Emmanuel & Otley, 1985). Indeed, as Kaplan (1982) argues, the more the time horizon shortens, the more difficult it becomes to identify items that can be attributed solely to one individual. Under these circumstances, it is fair to say that, deciding on what to include and what to exclude in the performance measurement and evaluation process becomes more a matter of personal opinion about how far does the manager's responsibility extends.

To sum up, for motivation to be present, the necessary condition is that the individual feels that his behaviour has the potential to influence the measure, and through that, his reward level. In the situation where the performance measure(s) is not seen as influenceable, or is seen as highly affected by factors beyond the individual's control, there is little chance of the individual seeing a direct connection between his behaviour (what he does), his evaluated performance (what the control system thinks he does), and his rewards (what he gets for what he does), and, as a result, it is highly improbable that there will be any positive impact on his motivation by the given combination of measure-reward (motivation loss). Furthermore, when measures which are felt to be uncontrollable are used, people are likely to become frustrated and resentful to the extent that they are willing to tamper with the measures so that they can produce invalid data which will help them achieve their personal goals (dysfunctional behaviour).

Similar dysfunctional behavioural consequences may also occur when measures are perceived as too subjective. An individual may be induced to distort - or, alternatively, ignore - the performance measurement system, if he believes that the process through which his performance is measured and evaluated is ambiguous or negatively biased. Subjective (so-called 'soft') measures that rely largely on the personal judgement of the superior can be effective motivators under certain conditions, particularly when there is i) a high level of trust between the superior and the subordinate, and, ii) confidence on the part of the subordinate that the superior is capable of making an accurate and informed judgement about his (the subordinate's) actions. However, in most cases, the lack of measurement verifiability and objectivity results in the measures being seen by the individual as invalid indicators of accomplishment, and most usually breeds dissatisfaction and dysfunctional behaviour (Merchant, 1989 ; Simons, 1995).

From a motivational perspective, then, it seems justified to support that the use of

i) "hard", objective in nature, and

ii) controllable measures in the performance measurement and evaluation process

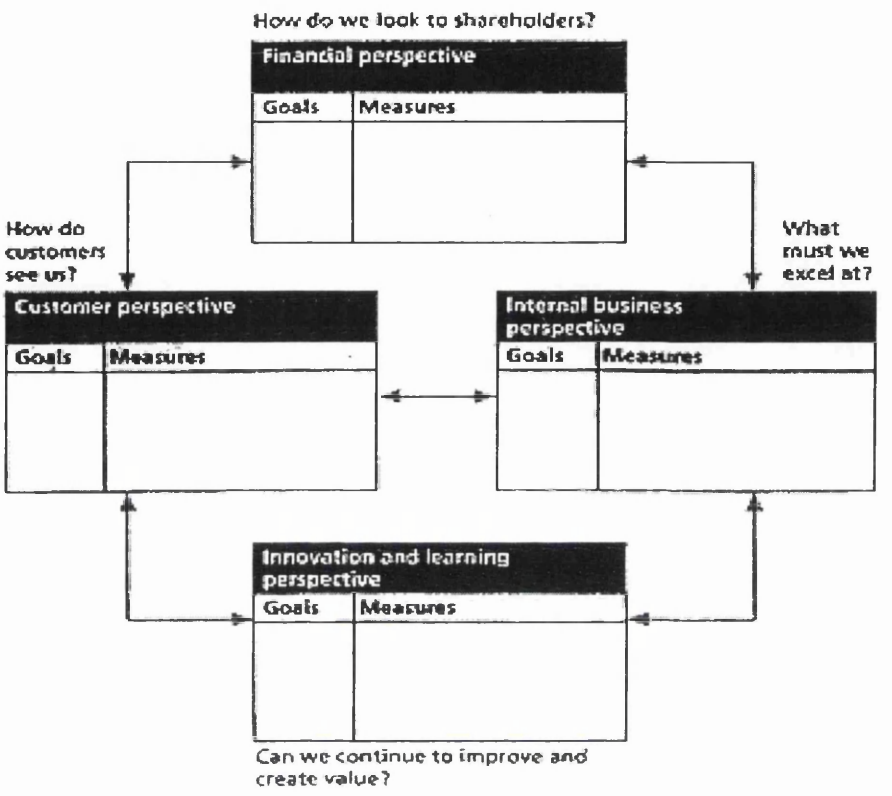
reduces the risks and the pertinent costs associated with perceived unfairness and the resulting frustration, and enhances the measurement system's motivational scope.

Simons (1995) also advocates the use of complete measures of performance for motivational purposes, that is, measures that are inclusive of all the behaviours and results which need to be performed and achieved. If we agree with Porter et al. (1975) that the work behaviour of any individual is two-dimensional, in that it can be looked at both in terms of the activities the person performs, and in terms of the actual results that these activities produce, then we would expect from any appraisal system that intends to effectively fulfil its control and motivational function to ideally employ performance measures that disaggregate and evaluate the work effectiveness of the individual in both these dimensions. To the extent that the measures employed are incomplete, i.e., fail to take account of both the individual's results and his activities, the chances that they will properly direct work behaviour are rather slim. Exclusively focusing on either activities or results is bound to produce undesirable behavioural consequences because it causes individuals to emphasise that which is measured to the exclusion of that which is not measured (Porter et al., 1975). A performance measurement and evaluation system that measures only results (what the individual has accomplished in his work) can be often found to motivate employees to behave in ways which assure good scores on the results measures, but which are dysfunctional from the point of view of organisational effectiveness, in the sense that certain activities are likely to be left undone (displaced motivation). Similarly, a system which focuses on only the activities the person engages in (how the individual has gone about his work) can just as well fail on a number of counts, as it tends to motivate the engagement in specific activities, but not the accomplishment of goals through these activities. Nevertheless, one should point out the practical difficulties involved in capturing accurately and completely managerial performance with any type of performance measures, particularly given the high level of uncertainty and dynamism in the current business environment and the increasingly important role of interdependencies within contemporary organisations. With the trend towards much flatter organisational structures, within which teams rather than individuals are expected to make the right decisions and take the necessary actions, the impact of task interdependencies on performance measures is today even

more stronger, and the degree of difficulty in discerning, measuring, and evaluating the manager's individual performance correspondingly much higher. It is essentially such concerns about the inherent incompleteness and inaccuracy of any single performance measure - i.e., concerns about any measure's (in)ability to capture accurately the full range of dimensions of (both short- and long-term) managerial performance (see, for example, Drucker, 1964 ; Hopwood, 1974 ; Mintzberg, 1975 ; Sillinglaw, 1977 ; Vancil, 1979 ; Parker, 1979 ; Hirst, 1981 ; Merchant, 1989 ; Drury, 1996) -, that have led management control theorists and practitioners alike to advocate the extension of the managerial performance evaluation process both in terms of the dimensions measured and the time periods covered (Emmanuel et al., 1990). They uniformly recognise the multidimensionality and complexity of managerial performance, and they warn that the non-inclusion of any pivotal (quantitative or qualitative) performance dimensions in the measurement and evaluation process entails significant motivation repercussions for middle-level management, in that such omissions may obscure and underestimate the importance of these dimensions in the eyes of the middle-level managers. Simply put, they draw attention to the problem of displaced motivation, i.e., to fact that, to the extent that the measures used reflect only some of the critical factors of managerial accomplishment, there is the danger that the managers will concentrate on only the variables measured to the exclusion of the other important factors that determine the long-term viability and success of a business unit and of the company as a whole.

On these premises, a large body of literature in the area of management control has been devoted to identifying possible ways of getting around these inherent measurement weaknesses so that to enhance the contribution of performance measures to the control and motivation of middle managers. One avenue that has been explored (e.g., American Accounting Association, 1971 ; Parker, 1979 ; Johnson & Kaplan, 1987 ; Singleton & Green, 1993 ; Kaplan & Norton, 1992, 1993, 1996) refers to the complementation of the performance measurement system with a variety of financial and non-financial, quantitative and qualitative indicators that can reflect - to the extent possible - the full range of key variables that contribute to the company's short- and long-run objectives, so as to improve the perceived and actual completeness and accuracy of the PMERS, and thereby its overall effectiveness as a motivational device. Kaplan's and Norton's (1992, 1993) balanced scorecard - a comprehensive framework for translating the organisation's strategic objectives into a coherent set of performance measures that aims at providing managers with a fast

but all-embracing view of the business from four distinct perspectives (financial, customer, internal and innovation, as depicted in Figure 2-3) - certainly represents a step in this direction.



Source : Kaplan, R.S. - Norton, D.P. (1992), "The Balanced Scorecard-Measures that Drive Performance", Harvard Business Review.

Figure 2-3 : The Balanced Scorecard

Another stream of management control literature advocates the integration of non-quantitative monitoring and personnel devices into the PMERS, with the intention of complementing the performance measurement process already in place. In this theoretical vein, effective two-way-communication performance appraisal interviews (Kikoski, 1999) and frequent face-to-face performance evaluation meetings (Emmanuel et al., 1990) between the middle-level manager and his / her superior are seen as essential management tools that can expand the scope of the performance measurement system and add to its completeness and equity.

All in all, the preceding discussion typifies a number of ideal qualities of optimally designed performance measures for motivational purposes. Figure 2-4, drawing from Simons' diagrammatic representation of characteristics of diagnostic control measures (1995, p.77),

summarises these ideal qualities, but primarily emphasises the resulting negative behavioural consequences that occur when - as often in practice - performance measures lack one or more of these ideal attributes.

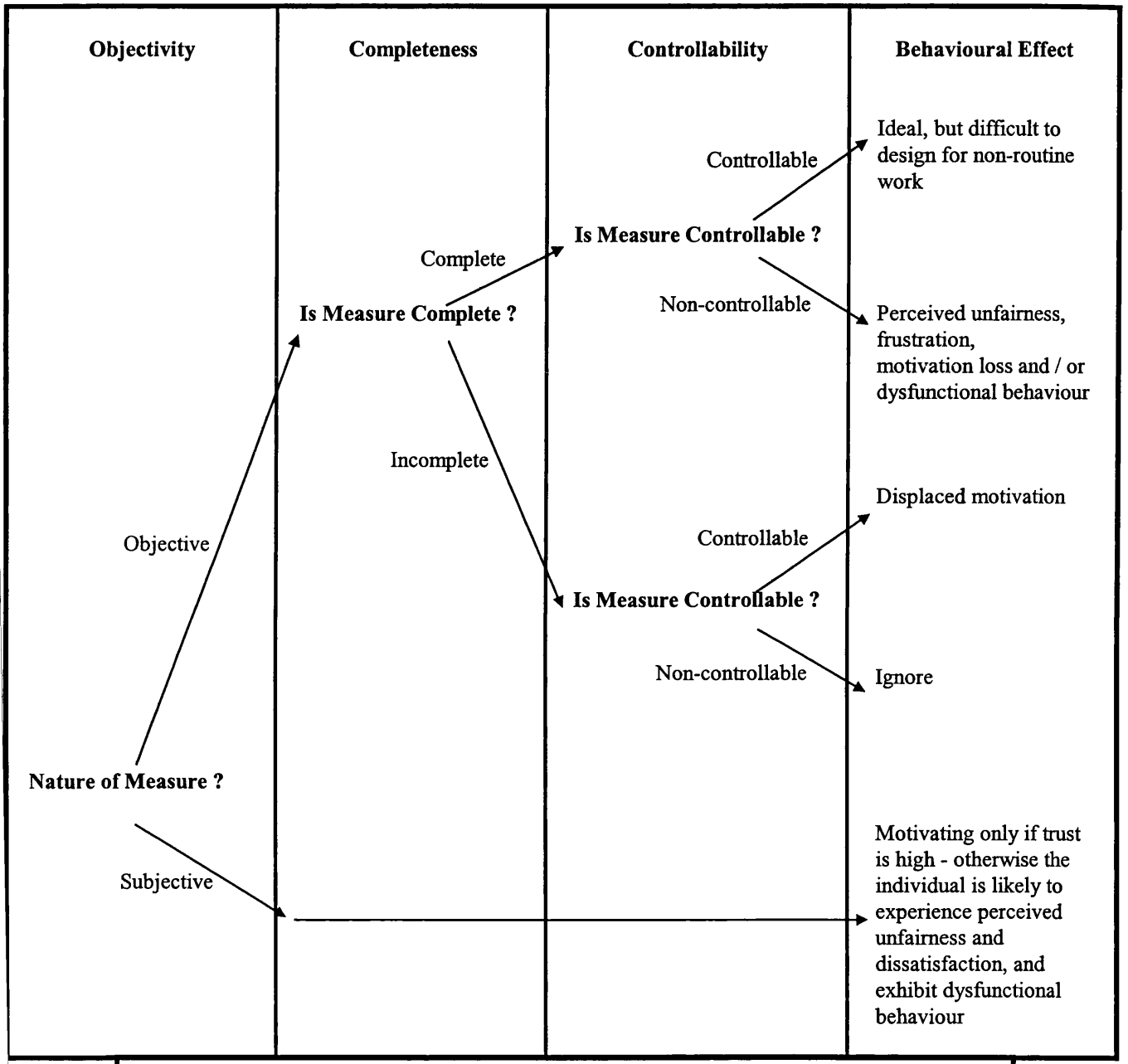


Figure 2-4 : Ideal Qualities and Behavioural Consequences of Performance Measures

Empirically speaking, most of the available research evidence in the area of measurement, evaluation and reward of managerial performance - coming either from the academic or the professional field - tends to focus almost exclusively on executive managers operating at the top level of the organisational hierarchy, and therefore does not apply directly to the issue of

middle-level manager motivation. As Ehrenberg and Milkovich (1987) note, "...surprisingly little evidence exists on the extent to which compensation policies [for middle-level managers] vary across firms and more importantly, on the effects of pursuing alternative compensation strategies" (p.1). In any case, the type of data existing are not readily available for the study of the form or effectiveness of the systems used to motivate middle-level managers, mainly because what is known about the motivating effects of top management reward-for-results contracts are not generalisable to middle-management levels. Both the underlying philosophy and the consequent design choices, as well as the ultimate effects of these motivational devices on managerial behaviour are quite different for the two organisational levels (Merchant, 1989), most probably reflecting the fundamental differences in their respective job roles and status within the organisation (Uyterhoeven, 1972).

Nevertheless, there is some evidence indicating that both the perceived technical imperfections of the performance measures employed, as well as the way in which these measures are utilised in practice within the PMERS, have various negative psychological consequences on managers' individual and social behaviour. Early research into the behavioural effects of management control systems - as well as the subsequent body of literature that emerged as an extension of these early research endeavours - provide (mainly case) evidence of managers engaging in dysfunctional behaviour as a response to the way their performance was evaluated and rewarded through the company's PMERS (Briers & Hirst, 1990). Argyris (1952) in his seminal study on the different alternative performance evaluation styles and their behavioural effects first reported that the excessive emphasis on and the inflexible and uncompromising use of incomplete and inaccurate performance indicators led to a number of dysfunctional consequences for the organisation, including increased tension, frustration, resentment, suspicion, fear, mistrust, and potentially deterioration in the managers' long-run performance. More specifically, he found that where too much pressure was exerted on achieving bottom-line (most usually accounting, profit-oriented) results, managers tended to respond in a number of undesirable ways : either they would attempt to shift the blame for their problems to their peers and superiors causing a deterioration in interpersonal relationships ; or they would experience increased tension (as a manifestation of internalising the pressure) and, eventually, frustration, which in the long term tended to reduce managerial effectiveness due to the tendency of frustrated managers to, for example, forget things, become apathetic and indifferent, make slow decisions, or even withdraw socially. In a study

that was carried out in a European context to investigate the conditions under which budget control mechanisms could be used to promote positive attitudes in managing task performance, Hofstede (1968) concluded that too much stress on earnings measures and financial results led to a feeling by the managers involved that the performance appraisal process was unjust. The latter can be seen as a natural reaction on the part of the managers to a perceived as unavoidably incomplete and uncontrollable performance evaluation system. On the other hand, too little emphasis on the budget control system was found to result in the system being of little relevance and motivational value. At the end, Hofstede suggested - in much the same spirit as Emmanuel et al. (1990) - that the appropriate balance may be obtained by good upwards communication from one's subordinates, and by using the accounting performance measures in a supportive and flexible manner, that will allow the subordinates adequate scope for initiative and creativity. Similar conclusions were reached by Hopwood (1972, 1973, 1976) in his study on the effects of different performance evaluation styles on managerial behaviour. Hopwood contended that accounting performance measures may never be technically adequate because they are an incomplete reflection of managerial performance ; they can only approximately represent an organisation's economic cost function ; they reflect aspects of performance which are not necessarily controllable ; and they myopically emphasise only the short-term dimension of the manager's performance. Hence, he argued that persistence on such imperfect performance measures will have only adverse behavioural consequences. The empirical evidence of Hopwood's (1972, 1973) studies were consistent with his propositions, indicating that a rigid style of evaluation emphasising the absolute necessity of meeting short-term financial results was associated with feelings of injustice about the performance evaluation process on the part of the manager, as well as with widespread worry and tension on the job, poor relations with superiors and colleagues, manipulation in data reporting, and undesirable decision making behaviour from the company's point of view ; a non-accounting style of performance evaluation within which accounting data played a relatively unimportant part consistently failed to encourage an active involvement with the financial aspects of the organisation. It was only the profit-conscious evaluation style, under which the accounting information were used with some care and in a rather flexible manner, with more emphasis put on the attainment of long-term, company-wide objectives, that succeeded in drawing the managers' attention to critical financial parameters, avoiding at the same time the various undesirable consequences that are associated with rigid styles of performance evaluation. In agreement with the above findings, Kenis (1979), in a study examining *inter alia* the motivational effect of two

different supervisory styles, discovered that a flexible evaluation style (with a moderate emphasis on accounting, profit-oriented performance indicators) was positively related to managerial motivation and performance ; in contrast, a more punitive style (with a higher stress on accounting data), although positively related to managers' motivation, it was also positively related to job tension and negatively related to all measures of managerial performance employed in the study. Similarly, Lowe and Shaw (1968), Schiff and Lewin (1968), and Onsi (1973) provided case evidence to support the view that the excessive emphasis on budget (accounting-oriented) results are likely to lead to dysfunctional behaviour on the part of the managers involved, in the form of misrepresenting data about their planned performance (i.e., building slack into performance targets) or in the form of transmitting misleading data about their actual performance (invalid data reporting). In effect, only Otley's (1978) replication and extension of Hopwood's (1972, 1973) work produced results contrary to the ones already reported, showing that rigid performance evaluation, conducted largely on the basis of financial performance indices, appeared to be an effective management style, which, although it led to an asymmetric preoccupation with the short term at the expense of the long term, it had little impact on job-related tension or on information manipulation. These findings, however, may need to be seen as an artefact of the different setting in which the Otley (1978) study had been conducted. Indeed, this study has since stimulated a large body of subsequent research that attempted to find an explanation for these apparently conflicting results, particularly examining the environment within which the organisation, the unit, and the middle-level manager are operating as a potential moderator of the effects of evaluation style on managerial motivation and performance (see subsequent section 2.4.5 for a review of this literature). Seen as a whole, however, the above reported findings are quite indicative both of the undesirable behavioural side effects that are likely to follow the inflexible use of inherently incomplete and inaccurate measures in the performance evaluation situation, and of the potential avenues of getting around these measurement weaknesses in the motivation and control context.

2.4.4.2 Performance Standards

The role that standards of performance are said to play within motivational contracts is vital. Typically, the standard-setting process (alternatively referred to as goal- or target-setting process) is an integral part of the overall performance-measurement-evaluation-reward system, through which reference points (benchmarks of expected performance) are provided against which the

manager's actual performance is evaluated further in the process. Merchant (1989) prescribes two all-important attributes of performance standards for motivational purposes :

a) they must be challenging, and

b) they must be preset.

Drury (1996) rightly emphasises that "if we accept that the setting of targets can increase [managerial] motivation, we must then consider at what level of difficulty the targets should be set" (p.628). The specifications for establishing performance standards that provide managers with the right amount of challenge derive basically from the organisational behaviour research. Locke (1968), in a study that is widely regarded as a milestone in the investigation of human goal-directed behaviour, stresses the importance of goals as major determinants of work motivation and performance. His Goal-Setting theory basically holds that

i) specific goals result in greater effort (i.e., higher level of motivation) than do more general goals,

ii) moderately difficult goals (when accepted) result in greater effort than do easier goals, and

iii) feedback results in higher effort than does the lack of feedback

(Locke, 1968 ; Locke & Latham, 1990).

A substantial body of affiliated literature emphasises the criticality of deciding on the level of difficulty of predetermined standards by demonstrating the profound impact that perceived goal difficulty has on employees' motivation. The general conclusion of these studies is that optimum motivation occurs when targets are perceived to be moderately difficult ; when goals are deemed to be either too easy or too difficult, motivation tends to reduce (Stedry, 1960 ; Stedry & Kay, 1966 ; Hofstede, 1968 ; Lawler, 1973 ; Carroll & Tosi, 1973 ; Hopwood, 1974), and the likelihood of dysfunctional behaviour increases (Porter et al., 1975).

Atkinson's seminal work on achievement motivation (1964) clearly indicates that challenging, attainable standards are best suited for motivational purposes. Apparently, people who see themselves as having about a 50:50 chance of successfully attaining moderately difficult targets, tend to exhibit a stronger desire (motivation) to perform well in their tasks and achieve the relevant goals set, presumably because this task accomplishment becomes associated with feelings of achievement and competence (Porter et al., 1975). As long as an individual perceives that there

exists a reasonable probability of achieving a demanding target then, this target is expected to motivate him / her ; if, however, either of these two necessary conditions is not met, i.e.

i) either the target itself is not challenging enough, or

ii) the probability of attaining the target is regarded low,

the motivational impact of the target will fall dramatically.

In essence, the effect of goal difficulty on managerial motivation is appropriately reflected in the inverted U-shape curve of Figure 2-5 (adapted from Simons (1995)).

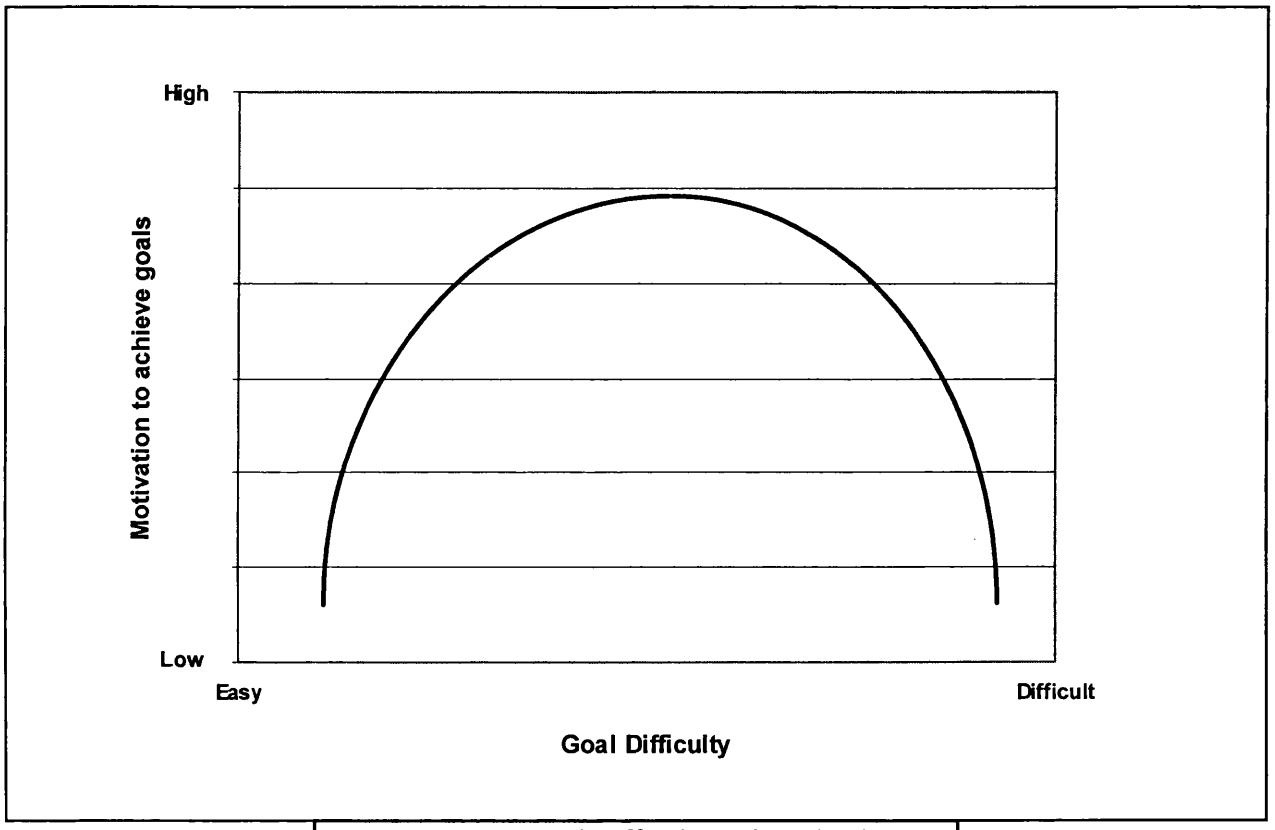


Figure 2-5 : Goal Difficulty and Motivation

Goals which are too easy (less than challenging) to obtain can have a negative effect on motivation and can lead to underperformance, simply because when individuals are faced with goals that are too easy, they are content to achieve these low goals. People can reach such targets with less than maximum effort, or, alternatively, they can slack off after they reach the target (Merchant, 1989) - in any case, they will not strive to their potential (motivation loss). On the other hand, targets that are excessively difficult can lose their motivational value, or even induce dysfunctional behaviour, if they are seen as unattainable (Locke et al., 1988). When employees feel that the standards on

the basis of which their performance is evaluated are unreachable or virtually impossible to obtain, they tend to perceive these performance standards as unrealistic and, thus, unfair, and they are likely to i) either give up pursuing these targets (motivation loss), or ii) compensate for the perceived unfairness of the targets by deliberately distorting the PMERS in order to make it appear as if the targets have been met (dysfunctional behaviour). Such non-neutral behaviour may take the form of the frustrated manager sending invalid data through the evaluation system in order to make his / her performance look better, or even him / her engaging in dysfunctional activities in order to achieve the difficult goals. In other instances, goals which are seen to be too difficult, can end up motivating poor performance. When faced with very difficult goals, individuals often embark on a kind of implicit bargaining with the organisation, restricting their performance so that it falls well below the set goals, in order to convince the organisation that these goals are much too difficult (Porter et al., 1975). Essentially, all these manifestations of dysfunctional behaviour are to be seen as rational reactions from the managers involved to a perceivably imperfect, and as a result, unfair control mechanism. A number of management control theorists (e.g., Argyris, 1952 ; Hofstede, 1968 ; Hopwood, 1973 ; Onsi, 1973 ; Collins, 1978 ; Merchant, 1981, 1983 ; Brownell, 1982 ; Brownell & Hirst, 1986 ; Bottger & Hirst, 1988 ; Simons, 1995 ; Lau et al., 1995, 1997) have suggested that one way to prevent or minimise the de-motivating consequences of the perceived unfairness of standards is to include the subjects of the control system themselves (that is, the middle-level managers in our case) in the standard-setting process, i.e. to promote a situation where superiors and subordinates set goals jointly. Participation by subordinates in the standard-setting process, wherever possible, can allow more reasonable performance targets and the perception of reasonable performance targets, basically helping the targets become 'internalised', accepted by the managers as their own targets, and therefore making them more suitable for motivational purposes. The underlying argument here is that the central consideration in setting motivational performance targets is to ensure that these targets will be accepted as relevant by the managers they are intended to motivate, and, in this sense, what is really critical about the standards of performance that are set is not how high or low they are in reality, but how attainable they are *perceived* to be by the managers that are expected to reach them. In effect, it is the manager's *perception* about the attainability of these targets that is recognised as what really matters for the targets to become accepted, and thus motivationally effective. Hence, allowing the subordinate manager to participate in the process of setting the targets against which his performance will be later evaluated may be a useful method of improving the communication

channels between top- and middle-level management (Hofstede, 1968), and ensuring that these performance targets will be accepted by the manager they are supposed to motivate (Emmanuel et al., 1990). In practice, however, the implementation of such joint goal-setting is not without problems. High participation in the setting of standards of desired performance provides middle-level managers with the chance to negotiate for and come up with targets that are easier to accept and 'internalise', but also with the opportunity to introduce slack in (bias) their performance standards when they have the incentive to do so (Lowe & Shaw, 1968 ; Schiff & Lewin, 1968 ; Dunk, 1989). It is for these reasons that the majority of the scholars in the area of management control advocate a more sensible and selective implementation of participation in the standard-setting process, with due consideration to the various contingent organisational, environmental and cultural job-related factors and psychological parameters of the managers involved, such as the subordinate's personality (Brownell, 1981), the superior's personality (Licata et al., 1986), the organisation's structure (Bruns & Waterhouse, 1975), and the difficulty of the task performed (Mia, 1989), so that the potential positive contribution of participation to the managers' acceptance of and commitment to organisational goals is fully realised (Drury, 1996).

Whether centrally imposed or set in a more democratic, participative manner, as far as the difficulty of standards is concerned, the message from the literature appears to be straightforward. To motivate the best possible level of actual performance, the (budget or other) performance target must be set at the highest level of difficulty the middle-level manager will accept, i.e., at a level slightly above that which will, on average, be attained by the manager (Emmanuel et al., 1990). An interesting implication of the above conclusion is that the target level which is expected to have the maximum positive motivational impact on the manager's performance is unlikely to be achieved much of the time by the manager. Conversely, a target that is usually achieved by the manager can essentially be seen as a target that has not utilised its full motivational potential, as it motivates in all likelihood a relatively lower level of managerial performance. In this sense, if performance standards are to be set at a level that will motivate managers to achieve maximum performance, deviations from these standards are to be expected. As Drury (1996) notes, the practical repercussions of the latter for the measurement and evaluation of managerial performance are significant. Given that motivationally effective performance standards should not be expected to be attained all the time, it is essential that the deviations from these standards are not used by top management as a punitive device. Such practice in the performance evaluation process is more

likely than not to encourage middle-level managers to either attempt to obtain lower targets by either under-performing or by deliberately negotiating easily attainable standards, or attempt to reach the targets by any means, even if this implies dysfunctional behaviour on their behalf with short- and long-term negative consequences for the company as a whole. Obviously, the attitude of senior managers to adverse variances is critical to the successful operation of a truly motivating PMERS. If middle managers are strongly criticised and penalised whenever their performance is even slightly below the standard set, there is little doubt that, eventually, less adverse variances will be reported. However, as Emmanuel et al. (1990) point out, the means by which this will have been achieved will be less than desirable and overall performance is likely to be reduced rather than increased in the long run. From a purely motivational perspective then, to motivate the best level of actual performance, demanding targets should be set and small adverse variances should be regarded as a healthy sign and not as something to be avoided. If targets are always achieved with no adverse variances, this most probably indicates that the standards of performance used are too loose to motivate the best possible results (Drury, 1996). Nevertheless, one should recognise that in practice companies may have other, non-motivational reasons for allowing the setting and use of more (or less) achievable targets. As Merchant (1989) convincingly argues, the motivation of managers is neither the sole function of performance standards (other functions that they may serve include planning and forecasting, control, and communication and co-ordination) nor the only consideration of top management within organisations. In essence, Merchant's point centers around the conflict between the reporting, planning, control, and motivational uses of performance targets and the level of difficulty of these targets. In practice, the tight performance targets that are ideally required for motivational purposes as emphasised in the previous paragraphs, are bound to be inappropriate for, say, internal corporate resource planning or external results reporting purposes. For example, tight budget-targets that are unlikely to be achieved are most unsuitable for cash budgeting and for harmonising the company plans in the form of a master budget (Drury, 1996). It is on these premises that Stedry (1960) suggests the development and use of separate sets of performance targets for planning and for motivational scope. To the extent that performance targets of different level of difficulty are critical for different purposes within the organisation, what needs to be acknowledged is that it is highly unlikely that one set of targets can meet all the reporting, planning, control and motivational requirements of the organisation at the same time.

Apart from the critical issue of how difficult the predetermined goals should be, another consideration that bears significant consequences for the motivational effectiveness of performance standards is arguably their level of specificity. Open-ended goals of 'do your best' type are not usually desirable, as empirical research on this area has unequivocally shown that motivation is reduced when goals are not specific (Meyer et al., 1965 ; Tosi, 1975). Individuals seem to respond better to clearly stated, specific targets. As Donaldson concludes, "Goals must be boldly stated and clearly defined [if they are] to influence organizational behavior" (1984, p. 139). On the whole, the conclusions of a review of more than 100 studies in the organisational psychology literature by Locke et al. (1981) serve to sum up everything mentioned so far about the optimal form the target should take in order to realise a maximum motivational impact : i) specific, and ii) challenging goals appear to induce better performance than medium, easy, do-your-best, or no goals.

Merchant (1989) finally adds a last necessary element on the ideal configuration of performance standards that are intended for motivational purposes - they ought to be preset, that is, they should be set before, and not after or during, the measurement period. The rationale for this recommendation is based on the realisation that the majority of people are innately goal-oriented, often to the extent of responding to the challenge of trying to meet a performance standard as long as the standard exists, even when the organisation in which they are working does not give them any monetary rewards for that achievement. Such managers are found to judge their personal success by how well they achieve a predetermined goal, and they put a great deal of effort in their job in order to improve their chances of being successful in attaining it. In this sense, preset standards of performance appear to have an extra motivational potential that is related to the intrinsic satisfaction that can be gained from attaining a preset target (Emmanuel et al., 1990). Furthermore, little doubt exists that performance standards that are constantly being revised throughout the measurement period - or are set after the period's end, for that matter - are bound to be seen with scepticism by those who are evaluated on the basis of these standards, may be regarded as inconsistent and unfair, and can conceivably bear negative behavioural side-effects associated with the manager's frustration, such as loss of motivation and opportunistic behaviour on his / her part (Merchant, 1989).

Summarising, the best results on managers' motivation and subsequent performance are likely to be obtained when performance standards are :

(1) preset - set before the measurement period

(2) specific - explicitly stated and clearly defined

(3) challenging - demanding, but not impossible to attain

(4) internalised - accepted by those they are designed to motivate.

On the empirical level now, the majority of the studies examining the behavioural effects of the target-setting process and of the targets set themselves have been experimental. Reviews by Locke et al. (1981) and Locke and Latham (1990) report over 400 laboratory and quasi-laboratory studies conducted, studies that include experiments with loggers (e.g., Latham & Baldes, 1975), maintenance employees (Frayne & Latham, 1987), truck drivers (Latham & Saari, 1982), engineers and scientists (Latham et al., 1978). However this evidence can hardly be regarded as generalisable in organisations ; it may be erroneous to assume that the relationships found to exist in such controlled settings will hold true within companies. As Emmanuel et al. (1990) point out, more reliable evidence about the effects of setting targets for managers can only be obtained from longitudinal field studies that have been carried out in real organisational contexts - although, as the authors admit, only a handful of these exist. Nevertheless, taken at their face value the research evidence from these psychological studies seems to suggest that the best results on managers' motivation and subsequent task performance should be obtained by setting clear, specific and challenging goals, with 'challenging' meaning sufficiently high both to have a motivational impact and to be accepted ('internalised') at the same time by those who work under them as being attainable targets.

In more pertinent empirical studies conducted in organisational settings, Stedry and Kay (1966) and Chow (1983) provided evidence that setting specific difficult targets leads to higher task performance than setting specific moderate or easy targets. In his study on the budgetary process within organisations, Hofstede (1968), based on case evidence from six manufacturing plants, attempted to identify - among others - the conditions under which targets can have a high degree of relevance to managers, and thus act as an important motivational device. His conclusions concerning the budget-targets difficulty were similar to those reached by Stedry and Kay (1966) and Chow (1983). Up to the point where the target is no longer accepted, the more demanding the

budget target, the better the results achieved. Demanding targets are also seen as more relevant than less difficult targets, but negative attitudes result if they are seen as too difficult. Carroll and Tosi's (1973) findings of a study examining the effectiveness of a MBO (Management-By-Objectives) system, indicating that difficult goals led to reduced effort (particularly so in the case of managers who were less mature, experienced, and self-confident), are consistent with the above notions. Kenis (1979) in a survey-based research also found that the use of tight yet attainable budget standards appeared to lead to the higher motivation and actual performance, whereas Stedry (1960), in a study that was intended to be a simulation of the budgetary situation, demonstrated, first, that the formulation of a specific target generally improved performance, and second, that the best overall performance was reached when high targets were set. More recent experimental and survey research with managerial samples (e.g., Waller & Chow, 1985 ; Hirst & Lowy, 1990 ; Lindquist, 1995) unanimously reports a positive relationship between standard tightness and managerial performance as well. Overall, it seems safe to conclude here that the evidence coming from this small number of empirical studies conducted in a managerial performance evaluation context is in accordance with the findings of the numerous experimental studies carried out in the field of applied organisational psychology. Superior task performance is essentially motivated when the performance standard is set at an attainable, yet somewhat demanding (i.e., challenging) level.

2.4.4.3 Organisational Rewards

The final link in the management control cycle is to connect the achievement of desired results - measured in relation to a predetermined set of performance measures and standards - with incentives for managers, so that they are motivated to achieve the performance targets that have been set (Emmanuel et al., 1990). The allocation of rewards to individuals by organisations differentially, on the basis of the results of performance evaluations, is alleged to strongly influence the manager's behaviour within the organisation, and help ensure that effort on his / her part is devoted in organisationally desirable directions. Vancil (1979) usefully distinguishes three main categories of rewards whose purposeful giving and / or withholding by organisations is thought of as having some influence on managerial motivation and performance. In practice, managers at the middle level of the organisational hierarchy enjoy basically three types of rewards:

(a) they derive some pleasure (satisfaction) from managing an entity of their own,

(b) they enjoy the power and status that accompanies their position,

(c) they earn various monetary rewards.

These monetary rewards come in many different forms and combinations in the companies' reward plans, however they can effectively be divided according to the basis on which they are allocated to managers into two further sub-categories :

i) performance-related monetary rewards - i.e., rewards such as cash bonus awards and fringe benefits that are distributed to the manager on the basis of the attainment of some target on a predetermined performance measure that the manager can influence, therefore making the receipt of reward more under the manager's control.

ii) market-based monetary rewards - that is, rewards that basically aim to directly link the interests of the management with those of the shareholder by varying the manager's compensation directly with the company's stock price, e.g., stock options and stock appreciation rights.

Organisations use in practice a wide range of alternative combinations of these rewards to develop increasingly sophisticated compensation programmes, which they most usually attempt to link to their performance measurement and evaluation systems with the hope that they can derive some motivational value from them.

Porter et al. (1975) identify the necessary conditions that must exist in order for this rewarding of work effectiveness to motivate job performance. According to their analysis, to be effective in a motivational sense the rewards distributed by organisations must be

a) important, attractive to those they are supposed to motivate, and

b) directly, clearly and expressly linked to the type of performance that is to be motivated.

It is both intuitively and empirically well-founded that the impact of any given organisational reward on the individual's motivation depends, at least to some extent, on the perceived value (attractiveness) of the reward to the individual. Clearly, it makes sense that the more attractive a reward is, the more it can motivate people to behave in certain ways in order to obtain it. The overall attractiveness of a reward to the individual, and thereby its motivational effectiveness, is said to be related both to the size and the nature of the reward (Merchant, 1989), as well as to its timeliness, as rewards long separated in time from the performance they are intended to reinforce are likely to lose much of their perceived value and incentive effect (Costello & Zalkind, 1963).

However, as it is emphatically argued in the organisational psychology literature, the attractiveness (importance) of any reward is more wisely seen in relative terms, specifically in relation to the individual's present needs, and, in like manner, the motivational potential of the reward is better evaluated on the basis of whether or not, and to what extent, is the reward expected (by the individual) to satisfy these needs of his. In this sense then, with respect to the motivational ramifications of how much (size of reward), when (timing of reward provision), and what (nature of reward) is to be promised to employees to maximise their motivation, organisations' reward policy seems straightforward. Organisations should employ those rewards that satisfy their employees' needs, in order to maximise

i) the perceived attractiveness (perceived value) of their reward-package, and, by that means,

ii) the motivational effect of this reward-package.

Though this may sound simple, in practice it is not easy to do, for the most part because there are large individual differences in the degree to which the different rewards available are valued by different individuals[2] (Porter et al., 1975). The perceived value and motivational impact of each of the various reward forms tend to vary substantially and in meaningful ways, possibly depending on the manager's individual needs, reward preferences and personal circumstances (Emmanuel et al.,

[2] Indeed, there is a great deal of psychological research on the importance (attractiveness) of different rewards, although only a small fraction of studies have been conducted in real organisational contexts with managerial samples. Reviews of this literature (e.g., Herzberg et al., 1957 ; Lawler, 1971) unanimously conclude that, altogether these studies show that significant and comprehensible individual differences exist in the importance people assign to different rewards. A closer look into more relevant studies setting- and sample-wise indicates that there is evidence showing some systematic reward taste patterns among employees operating at different hierarchical levels within the organisation. For example, it appears that managers in general consider monetary (extrinsic) rewards as less important than do lower-level employees (e.g., Centers & Bugental, 1966 ; Kahn, 1958 ; Ronan, 1970). Similar patterns are also apparent between lower- and higher-level managers. Porter (1961) reports that pay is rated second in importance by lower-level managers but only fourth in importance by middle-level managers, whereas evidence exists to show that for top-level managers the perceived value of such monetary rewards is even smaller (Lawler & Porter, 1963). Other empirical studies indicate that managers in the middle level of the organisational hierarchy are not as interested in the stability of their short-term income (after their base salary is assured) (Eaton & Rosen, 1983) - they are probably much more interested in other, more intrinsic type of rewards, such as protecting their domain of autonomy and improving their prospects for promotion (Emmanuel et al., 1990). However, these very general patterns seem to fade when one considers the evidence that show significant differences in the reward preferences between managers who operate in autonomously run units versus managers who operate in more centrally administered divisions (Brazeal, 1996), between managers who work in the private sector versus managers who work in the public sector (Khojasteh, 1993 ; Karl & Sutton, 1998), between managers who come from different cultural backgrounds (Pennings, 1993 ; Nessim & Tanuja, 1998), differences that do not refer only to the managers' preferences for extrinsic or intrinsic rewards but also to their more specific preferences for particular forms of rewards. These findings, especially when considered vis-à-vis the previously mentioned large body of empirical evidence from the field of psychology that indicates that reward tastes vary systematically also between individuals of different gender, age, intelligence, personality, educational and family background - i.e., a multiplicity of personal factors over which the organisation has little or no control -, come to underline the difficulties involved in developing a reward package that can accommodate the individual preferences of all the company's managers.

1990). For some people, extrinsic (tangible, directly provided by the organisation) rewards such as immediate cash awards and salary increases are clearly first in importance, while others are much more interested in intrinsic (intangible and more self-administered) rewards such as increasing their domain of influence and responsibility or getting recognised for their achievements. In addition, similar rewards may also be highly valued by different people for quite different reasons ; for instance, pay and promotion, the two most typical rewards offered by organisations, are important to some people because they simply increase their income, to others they are important because they come to symbolise other, more intangible goals such as personal growth and success, or status (Armstrong & Murlis, 1988). To make things even more complicated, the research that has been conducted on the importance of rewards suggests that the value people attach on the available rewards tends not to be static, but it rather changes over time as the individual's circumstances, tastes, and needs change, so that what is valued today by a person may not be valued at a later time by the same person (Porter et al., 1975). Designing therefore a reward system that can offer to each individual manager in the organisation the exact rewards that he / she values at the time so that to maximise the reward package's motivational effect is clearly more complicated than it first sounds.

Of equal motivational importance to what rewards are to be administered, is considered in the literature the issue of how the organisation is going to distribute those rewards to its employees. There is hardly any doubt that the way in which organisational rewards are dispensed through the PMERS has a significant influence on the behaviour of individuals within the organisation. Porter et al. (1975) emphasise that the effectiveness of any chosen set of rewards as motivators of performance depends, apart from their perceived attractiveness, also on the employees' perception about whether or not these rewards are tied to the performance they (the rewards) are intended to motivate. Stated more simply, no matter how more or less valuable (attractive) the company's reward package is, unless it is quite explicit in prescribing that the administration of the rewards available is closely related to the evaluation of people's performance, it should not be expected to effectively motivate people towards desirable performance. Clearly, the offering of rewards by the organisation acquires motivational properties to urge people towards effective performance, only when people perceive that the only way to obtain the rewards offered is by attaining the organisationally required performance. From a motivational perspective then, the better the PMERS manages to establish and reinforce the employees' belief about a direct link between their

performance and the rewards they receive, the stronger its potential impact on their motivation is likely to be.

On these behavioural grounds, a number of management control theorists (e.g., Ronen & Livingstone, 1975 ; Porter et al., 1975 ; Kopelman & Reinharth, 1982 ; Merchant, 1989) stress the importance of incorporating in the PMERS rewards which are performance-dependent, i.e., administered on the basis of the managers' individual performance. Others (for example, Armstrong & Murlis, 1988) go a step further to point out that having a differential reward system that is based upon merit is not enough from a motivational point of view. They argue that unless the managers in question are well informed and aware of the way in which rewards and performance are related within the PMERS, no positive effect should be expected on their motivation, even if the rewards they receive are related with their individual performance in actuality. Essentially, if we accept Hamner's (1974) line of argument about the formation of human behaviour within organisation, namely that

i) people compare their own performance to that of their peers to determine how well they are performing themselves ("Social Comparison Theory", Festinger (1954)),

ii) people compare the rewards they receive to the rewards received by their peers in order to determine the relative value of their own rewards ("Equity Theory", Adams (1965)),

then it is clear that, apart from the necessary strong link between individual performance and rewards in the PMERS, the openness and transparence of the company's reward system is also critical motivationwise. In effect, making reward information public so that all employees identify a strong connection between high performance and high reward, is seen as a vital step for the establishment of the motivationally important perception that performance and rewards are related, essentially the final link in substantiating the credibility of any merit-based reward system (Lawler, 1981).

To sum up, the rewards organisations utilise in order to motivate their managers' job performance need to possess in theory the following two necessary characteristics, if they are to fulfil effectively their motivational potential :

(1) they must be sufficiently valuable - attractive enough to the managers they are supposed to motivate, so that to offset and override other incentives managers may have to act contrary to the organisation's best interest (Merchant, 1989)

(2) they must be performance-dependent - perceived by the managers as being administered differentially, on the basis of their evaluated performance, so as to effectively direct managers towards the organisationally desirable performance when they strive to obtain the (presumably attractive) rewards offered.

It has nevertheless to be stressed at this point that the proponents of performance-related rewards appear to assume that extrinsic, financial rewards is the *raison d'être* of managerial performance (e.g., Wilson, 1973 ; Opsahl & Dunnette, 1979 ; Foulkes, 1985 ; Jensen & Murphy, 1988). However, this belief in the absolute importance of extrinsic rewards contradicts many major motivational theories (Lewis, 1991) which posit that there are multiple and differing motivational factors affecting human behaviour (Herzberg et al., 1959), among them intrinsic motivators such as the need for achievement (McClelland et al., 1953 ; McClelland, 1961), the needs of competence and self-determination (White, 1959 ; Deci & Ryan, 1985) or the feelings of self-fulfilment, worthwhile accomplishment, self-esteem, or mere joy one gets from performing an activity (Mitchell & Albright, 1972 ; Turney, 1974). Others (e.g., Deci, 1972 ; Amabile, 1983) go further to suggest that the excessive emphasis on external rewards and their use within motivational contracts in a manner that resembles the carrot-and-stick approach will probably be experienced as controlling and may even undermine the motivational power of such intrinsic rewards. They argue that particularly in the managerial setting, where these intrinsic rewards are much more evident, such an explicit emphasis on extrinsic rewards that are administered on the basis of individual performance is seen as misplaced and potentially dangerous, as it risks not only missing out on other, more intrinsically-oriented motivation opportunities, but also negatively affecting managerial motivation through the explicit use of extrinsic rewards (Hunt, 1992). In this sense, reward-for-performance compensation plans for middle managers - which, by the way, were initially developed to motivate performance in simple repetitive manufacturing jobs which had failed to stimulate intrinsic motivation (Lawler, 1971 ; Hackman & Oldham, 1980) - may be out of place, failing to address the multiple intrinsic motivational drivers (such as achievement, recognition, advancement, decision autonomy, power, and the work itself (Herzberg, 1968)) that can positively affect managerial motivation and performance.

Overall, it seems that the literature does not provide clear-cut directions for the design of reward schemes for managers at the middle management level. Most of the literature on organisational

incentive practice is heavily prescriptive (e.g., Armstrong & Murlis, 1988 ; Lawler, 1990 ; Foulkes, 1991), and the experts disagree both on their theoretical position of how such reward systems are to be designed, as well as on their trust on and interpretation of the available empirical evidence coming from the field. Some argue that the commonly found in practice reward-for-performance compensation plans are based on false premises about what actually activates, sustains and directs human behaviour, and as a result cannot deliver long-term performance improvement (see, for instance, Amabile, 1979, 1983 ; Kohn, 1993, 1993a). Others disagree, maintaining that the motivational benefits associated with performance-based reward schemes far outweigh the disadvantages of such systems (e.g., Murphy, 1989 ; Lawler, 1990 ; Stewart, 1993 ; McAdams, 1993 ; Rose, 1997 ; Abernathy, 1998).

On the empirical sphere, the question of whether performance-dependent rewards are motivationally effective in practice is difficult to answer and currently under debate in the area of management control. On the one hand, there is a substantial amount of evidence coming from the field of applied psychology that clearly supports the proposition that tying individual performance to rewards results in increased motivation and performance. In an attempt to summarise this literature, Lawler (1994) admits that much of the available evidence comes from experimental studies of poor methodological quality and of limited generalisability in the managerial setting, basically because in the majority of the cases little effort was made to control for the relevant extraneous variables involved and also because sample-wise most of these studies involve populations that bear little resemblance to managers. Notwithstanding these acknowledged limitations, his conclusions after reviewing this body of research are worth mentioning :

(i) Individual performance-based reward schemes appear to have the greatest positive effect on people's motivation and subsequent performance. Even the most conservative results seem to suggest that individual-incentive plans can increase performance by 10 to 20 percent.

(ii) Group- and / or organisation subunit-based reward schemes often do not lead to as high performance as individual-incentive plans, however they generally appear to be better at motivating individual performance than fixed reward schemes that make no attempt to relate the distribution of rewards to performance.

(iii) Company-wide reward schemes seem to exaggerate the advantages and disadvantages inherent in group-based incentive schemes ; that is, they appear to facilitate co-operation among organisation members more than group- and individual-incentive plans, but they fail

to motivate individual performance to the extent that group- and individual-based schemes do, most probably because they break down even further the perceived connection between individual performance and the administration of rewards.

Some authors, however, are not convinced of the applicability of these findings in a managerial performance evaluation context. They argue that in the main, psychological studies of motivation have used simple repetitive task behaviours to infer motivational influences, most usually assuming that higher task motivation equates with higher individual performance, and therefore that, to the extent that performance-contingent rewards have a positive motivational effect on task motivation, will also lead to greater organisational performance. However, they caution that to extrapolate from simple repetitive tasks to prescriptions for managerial reward for far more complex organisational work may be misleading.

Nevertheless, other more relevant studies in the field of applied organisational psychology (in their vast majority, survey-based studies, with managerial samples) have also reported a definite tendency for managers who believe that their job effectiveness has a significant impact on the rewards they receive to exhibit relatively higher levels of work motivation and performance (Lawler, 1966 ; Lawler & Porter, 1967 ; Porter & Lawler, 1968 ; Gavin, 1970 ; Schuster et al., 1971 ; Wofford, 1971 ; Lawler & Suttle, 1973). Furthermore, findings of a significant positive correlation between managerial task performance and performance-related incentive mechanisms, as these are reported in the empirical research on the effects of standard-based incentives on managerial behaviour in the area of management control (see, for instance, Rockness, 1977 ; Chow, 1983 ; Waller & Chow, 1985 ; Dillard & Fisher, 1990 ; Kren, 1990), provide support to the above conclusions.

As to the question of whether more valuable (attractive) rewards have a greater motivational effect on the manager's behaviour, the available empirical evidence is rather mixed and inconclusive. On the one hand, a number of studies (e.g., Porter & Lawler, 1968 ; Pritchard & Sanders, 1973 ; Pecotich & Churchill, 1981 ; Nakanishi, 1989) have concluded that, in general, the greater the importance attributed by the manager to the rewards offered, the higher the manager's job motivation and performance tends to be. On the other hand, other studies report either very weak

positive (see, for instance, Hackman & Porter, 1968) or even negative correlations (e.g., Jorgenson et al., 1973) between the perceived value of rewards and managerial motivation and performance.

In the last three sections, an attempt was made to address a number of theoretical and practical considerations with regard to the design of motivational contracts for middle-level managers. All in all, there is a widespread recognition in the literature of the motivational potential of well-designed combinations of performance measures, standards and rewards to influence and direct the behaviour of managers operating at the middle level of the organisational hierarchy. However, there is also great awareness of the pitfalls that are associated with ill-designed systems of performance measurement, evaluation, and reward. According to Merchant (1989), the ideal motivational contract has six primary characteristics :

1. performance measures that are congruent with the overall corporate goals,
2. performance measures that are controllable by the middle-level managers,
3. performance measures that can accurately and completely capture the performance of the middle-level managers,
4. performance standards that are preset and challenging,
5. rewards that are meaningful, but at minimum cost,
6. it is simple to understand, and easy to communicate and administer.

Even though such ideal contracts are impossible to design and implement in their entirety for higher level, managerial jobs, they are useful as standards by which one can evaluate the motivational contracts companies actually use. In practice, it seems that the design of motivational contracts for middle-level management is more of a struggle to find the right balance between the different trade-offs the designer must make in order to accommodate by degree all the above ideal contract qualities in the PMERS. And although this design task is relatively straightforward for lower level jobs, designing a suitable control and motivational mechanism that can be implemented uniformly to all the company's middle managerial staff, irrespective of whether they operate in conditions of high / low task complexity, high / low environmental uncertainty, high / low incidence of uncontrollable events, is certainly a challenge. As Simons (1995) concludes, failure to strike the right balance in the PMERS design can result - as repeatedly emphasised in the preceding sections - in limited control of factors and processes that are critical for the

organisation's success, in dysfunctional behaviour on the part of those being under the management control system, and / or in them totally ignoring the control system altogether.

2.5 Environmental Uncertainty and the PMERS : The Design of Motivational Contracts in Different Environments

2.5.1 The Contingency Theory of Management Control Systems

A number of management control theorists (e.g., Thompson, 1967 ; Galbraith, 1977 ; Waterhouse & Tiessen, 1978 ; Emmanuel et al., 1990 ; Simons, 1995), based on what is termed in the area of management accounting and control a contingency theory perspective, have emphatically expressed their doubts about the ability of the PMERS to instigate managerial motivation and promote managerial efficiency equally well under all environmental conditions, both certain and uncertain. In accordance with the fundamental premise of contingency theory that there is no one universally appropriate management control system (MCS) that applies equally to all organisations in all circumstances, they maintain that the PMERS needs to be specifically designed and implemented to fit the needs and specific circumstances of the organisation for which it is intended (Otley, 1980).

Overall, the contingency theory perspective in the management control systems literature basically emerged as an extension of the contingency theory of organisations in the field of organisational behaviour (Burns & Stalker, 1961 ; Chandler, 1962 ; Woodward, 1965 ; Lawrence & Lorsch, 1967; Thompson, 1967 ; Perrow, 1967, 1970 ; Pugh et al., 1976a, 1976b, 1977) to argue that, just as with different organisational forms, different management control systems will be more functionally appropriate than others in different circumstances, and, in this sense, the central design consideration for every system of control (such as the PMERS) should be how well the system fits the particular set of environmental, technological, and strategic circumstances within which it has to operate. Within a contingency theory perspective, therefore, the emphasis with regards to the design of any management control system is on identifying the most important - specific to each organisation - contingent variables (environment, strategy, structure, technology, culture, etc.) and achieving an appropriate matching between these variables and the particular features of the organisation's control system. Simply put then, the contingency theory of

management control systems represents an attempt to identify the most appropriate control system for a given set of circumstances (Otley, 1995a).

Throughout the years contingency theorists have attempted to identify and examine the specific features of the organisation's context that may have (or, more prescriptively, should have) an effect on particular features of the organisation's management control system design. Many studies have focused on the relationships between management control system and contingency variables such as technology (Daft & MacIntosh, 1978, 1981 ; Fry, 1982), organisation size (Williamson, 1970 ; Child, 1975 ; Merchant, 1984), organisation structure (Baumler, 1971 ; Child, 1972 ; Hopwood, 1972 ; Otley, 1978 ; Merchant, 1981 ; Jones, 1985) and environment (Khandwalla, 1972 ; Gordon & Miller, 1976 ; Hayes, 1977 ; Amigioni, 1978 ; Otley, 1978 ; Pfeffer, 1978 ; Waterhouse & Tiessen, 1978 ; Gordon & Narayanan, 1984 ; Govindarajan, 1984) which have been invoked to explain why management and accounting control systems have been found to differ from one situation to another. On the whole, three major classes of contingent factors have been identified : i) the environment, ii) organisational structure, and iii) technology (Emmanuel et al., 1990). Relevant features of an organisation's environment affecting management and accounting control system design that have been suggested include its level of uncertainty (unpredictability), the degree of competitiveness faced in the market place and the degree of hostility exhibited, as well as the number and level of complexity of the different product-markets in which the organisation operates. Organisational structure factors that have been considered to be important include size, interdependence, decentralisation and resource availability - all of which have been hypothesised to result in differences in the design of a management control system. Technology factors that have been suggested include the nature of the production process, its degree of routineness, the amount of task variety, and how well means-end relationships are understood within the company.

2.5.2 The Environment as a Contingent Factor : The Intervening Effect of Environmental Uncertainty on the Design and Motivational Function of the PMERS

Particularly with regards to the effect of the environment on the organisation's management control system design, a number of distinct - though related - theoretical formulations have been expressed within the general framework of contingency theory. In one of the early attempts to formalise such environment-MCS contingency relationships, Gordon and Miller (1976) identified

three main environmental characteristics that are hypothesised to affect the design of the organisation's control systems, namely dynamism (i.e., the rate of change within the environment), heterogeneity (that is, the number of different product-markets the organisation serves), and hostility (i.e., the intensity of the competition faced by the company). According to Gordon and Miller, a high level of dynamism, or rate of change, will require frequent control reports incorporating both financial and non-financial information, and which emphasise forecasts rather than past actual results ; a high degree of heterogeneity, or a high number of different product markets served, will lead to a decentralised management control system with quasi-autonomous responsibility centers ; similarly, in the face of severe competition or market hostility, there will be a need for a more sophisticated management control system that is capable of incorporating non-financial information about critical threats (Emmanuel et al., 1990).

In a similar vein, Amigioni (1978) developed a theoretical framework within which he attempted to assess the appropriateness of different management control tools, ranging from financial accounting and ratio analysis, through financial simulation models and responsibility accounting, to strategic planning devices. Further, he identified two major contingent variables, namely the degree of structural complexity of the organisation and the degree of turbulence (or instability, variability) in its environment. In Amigioni's view, whereas increasing structural complexity leads to the addition of new control tools to those already in use, environmental discontinuity will often require the replacement of such tools, which have now become obsolete, by new ones.

Drawing on Thompson's (1967) analysis of the effect of the environment on organisational structure, Waterhouse and Tiessen (1978) conceptualised the environment as having two important dimensions that affect the design of the organisation's management control system - the simple vs. complex dimension, and the static vs. dynamic dimension. They argued that when the environment is more simple and static (i.e., more certain and predictable) over time, centralisation of the decision making authority constitutes an easy and cost-effective mode of organisational control, and procedure specification provides an important means of both defining and limiting the authority of organisation members at the managerial level, facilitating, as such, the exercise of control at that level. Under such circumstances, Waterhouse and Tiessen predict that management control systems will be structured around performance measures and standards that are linked to - well specified in advance - through-put procedures, standard cost variance analyses, and routine

accounting-based control reports. In more uncertain and unpredictable (that is, more complex and dynamic) environmental conditions, however, where the procedures become difficult - if not impossible at the extreme - to specify and document, primarily due to the high incidence of unexpected and novel events, such direct control measures are infeasible to be implemented ; instead, in such conditions, more subtle forms of managerial control that focus on the decentralisation of the decision making authority to organisation members in the periphery, on planning and internal resource allocation, on monitoring (both financial and non-financial) outputs which result from organisation members' actions, and on the selection, socialisation, and professionalisation of organisation members, are seen as more appropriate by Waterhouse and Tiessen (1978). The latter draws parallels with Becker and Gordon's (1966) contingency argument that in situations where the interaction between an organisation and its environment is highly complex, top management would need to rely on the "...self-regulation of professionals" (p.329) for the coordination and control of its middle-level managers, as opposed to more formal types of control.

Other alternative theoretical conceptualisations of the environmental factor documented in the literature include concepts such as environmental 'stress', 'restrictiveness' and 'aggressiveness', all of them reflecting different attempts to capture various critical aspects of the organisation's environment such as the availability of opportunities and the extent to which the firm is manipulated or controlled by other organisations such as competitors, suppliers, customers and government bodies (Khandwalla, 1977 ; Pfeffer, 1981). But on the whole, one can safely argue that the major underlying factor appears to be environmental uncertainty (unpredictability) in all its guises (Otley, 1995a).

In a more recent conceptual attempt, Emmanuel et al. (1990) provided an interesting contingency theory framework that recognises the pivotal effect of the environmental uncertainty variable on the organisation's management control system. Starting from the premise that the nature of the predictive model at the manager's disposal is central to every control process, they make a fundamental conceptual distinction between :

- programmed decision making situations, where the manager taking the decision has a detailed and accurate predictive model that allows him to specify the means that should be used to achieve the desired result, and

- non-programmed decision making situations within which predictive models are only implicit and imperfect and the manager although he is able to identify the desired ends, is unable to specify the necessary means for the achievement of these ends.

On the grounds of this basic distinction between programmed and non-programmed decision making - which, should be noted, although is described in dichotomous terms, it is in fact posited as a continuum ranging between the two extreme points described - they suggest that the type of the decision making situation of the manager affects substantially the type and nature of the system that is appropriate for managerial control.

In more detail, Emmanuel et al. (1990) argue that in the programmed decision making scenario, the application of traditional management accounting techniques for motivational purposes are largely justified and, indeed, can be quite effective in motivating managerial performance. In a manner consistent with March and Simon (1958), they maintain that in conditions of relative environmental stability and certainty, lower-level managers are typically expected to execute centrally decided, largely programmed decisions about well-defined, independent, structured and repetitive tasks.

Under these circumstances, where

i) procedures at the middle managerial level are highly specified,
ii) means-end relationships are well understood,
iii) the information asymmetry between top- and middle-level management is comparatively low,
iv) the ability of the controllers to anticipate middle-level managers' behaviour is correspondingly higher,
v) the generation and use of data for planning and control purposes is relatively straightforward, in that managerial behaviour is clearly easier to predict, observe and measure,

the joint effect of carefully set performance standards, properly designed performance measures and desirable rewards is expected to constitute an effective means of motivating middle-level managers to exert increased levels of effort and energy towards the accomplishment of the organisation's wider objectives (Hopwood, 1973).

However, in more uncertain and unpredictable environmental conditions, where

i) the understanding of cause-effect relationships is less clear and definite,

ii) the non-programmed decision making and action taking is much more frequent and largely unavoidable - mainly due to the high incidence of unexpected and novel events -, and

iii) the level of task interdependency is substantially higher,

the information asymmetry between top- and middle-level management is likely to be higher, and thus, the ability of the organisation to specify and document in advance, either procedures and desirable behaviours for its middle-level managers, or their exact domain of authority and responsibility, is necessarily limited. Emmanuel at al. (1990) assert that in this more uncertain and dynamic context, the application of conventional systems of performance measures and related incentive schemes for managerial motivation and control is problematic, and their impact on middle-level managers' behaviour is rather ambiguous. They point to the difficulties involved in devising under these circumstances measures that can capture and reflect accurately and completely the middle-level manager's performance, and to the potential danger of non-neutral behaviour that can be instigated when highly desirable rewards are linked to such inappropriate performance measures. They conclude that the matching of the organisation's management control system to the organisation's environment, strategy, and structure should be a major consideration both when designing and when implementing such systems in practice, and thereby make a case for a contingency approach to the design and application of the company's PMERS and overall MCS, so that they can maximise their potential contribution to the motivation of managers operating at the middle level of the organisational hierarchy.

On the premises of the above contingency frameworks, a number of studies have thereof attempted to isolate the environmental uncertainty variable in order to i) examine its potential impact on the company's PMERS, and ii) investigate the possible adverse consequences that uncertainty may have on the behaviour of organisation members within the performance evaluation context. The great majority of these studies have basically hypothesised that uncertainty is likely to limit the feasibility (or the effectiveness) of certain types of controls, primarily due to the lack of unity and clarity of goals, and the limited knowledge of cause-effect relationships, both of which are incorrigibly associated with uncertain environments (Hartmann, 1997). As such, a number of studies have attempted to discuss the effect of uncertainty on the two major elements of the performance measurement and evaluation process, that is, the effect of uncertainty on performance

measures and standards. Govindarajan (1984), for example, concerned with the effect of uncertainty on standards of performance, notes that "performance evaluation presupposes [the existence of] targets - either explicit (e.g. budgets) or implicit. To arrive at *a priori* targets that can serve as valid standards for subsequent performance evaluation, however, one must be able to predict the conditions that will exist during the coming year" (p.128), a task that is formidable in the face of high uncertainty. In a similar vein, Galbraith (1977) maintains that, "the basic effect of (environmental) uncertainty is to limit the ability of the organisation to preplan or make decisions about activities in advance of their execution" (p.36). In that sense, the more uncertain, dynamic and unpredictable is the environment, the more difficult is to predict the conditions that will exist in the future and, as such, the more difficult it is to come up with satisfactory targets (standards of desirable performance) that can provide the basis for performance evaluation. Others are more concerned with the impact of uncertainty on performance measures, pointing out that uncertainty makes it difficult for performance measures to judge *ex-post* whether good (or poor) managerial performance is the result of good (or poor) effort on the part of the manager, or rather the result of (un)fortunate, (un)lucky circumstances that the performance measures were not able to detect (e.g., Govindarajan, 1984 ; Brownell, 1985). The evaluation of managerial performance within the PMERS relies fundamentally upon a detailed knowledge about outcomes associated with given managerial actions, or in other words, knowledge about cause-effect relationships. Thompson, however, argues that under uncertain conditions "causal actions often have multiple effects which ramify in different directions and varying distances into the future" (1967, p.85) and, thus, the consequences of these actions cannot be accurately predicted and anticipated. To the extent that the organisation's environment is characterised by high level of uncertainty, the cause-effect knowledge will be incomplete and, therefore, the ability of the PMERS to measure and evaluate managerial performance will be limited.

The impact of uncertainty specifically on accounting-based performance measures has been the focus of attention of a fair amount of studies in the area of management control. For example, Hirst (1981) contends that accounting performance measures, which, by definition, are internally oriented and focus on individual task performance, will be inappropriate in situations of high uncertainty where the effect of task and process interdependencies is significant, as they will not be able to capture and reflect information about how managers' performances interact and combine, and will eventually provide a rather incomplete picture of the managers' efforts. Similar

arguments are put forward by Govindarajan and Gupta (1985), Merchant (1990), and Ross (1995). Some other authors have extended the completeness argument mentioned above to formulate hypotheses about how uncertainty also affects the relevance of accounting performance measures (Govindarajan, 1984 ; Govindarajan & Gupta, 1985). As Hartmann (1997) points out, the central argument concerning the accounting performance measures' relevance is that in circumstances of high uncertainty, where other than financial factors determine an organisation's long-term viability, financial performance that typically emphasises short-term performance, is not a good indicator of real managerial effectiveness. In circumstances of high uncertainty then, the argument goes, accounting performance measures will be perceived as less relevant - and therefore of little motivational value - in the managerial performance evaluation context.

As to the question of "what happens when such incomplete and inaccurate performance evaluation mechanisms are implemented in conditions of high environmental uncertainty ?", a number of studies in the management control literature, basically following a line of reasoning first drawn by Hopwood (1972) and Otley (1978), have attempted to detail the dysfunctional behavioural consequences that would follow such a practice. Some of them predict that the use of inappropriate measures of performance in environments characterised by a high level of uncertainty will enhance the middle-level managers' job-related tension (e.g., Imoisili, 1989), or reduce their subsequent performance (e.g., Govindarajan, 1988 ; Brownell & Dunk, 1991) ; others predict that in highly uncertain environments, where the undesirable characteristics of performance measures (i.e., perceived uncontrollability, incompleteness, irrelevance) are exaggerated, superiors will be reluctant to utilise such measures and will emphasise the use of other measures of managerial performance (e.g., Merchant, 1984 ; Govindarajan, 1984). In some cases, these two kinds of hypotheses about the effect of uncertainty in the performance evaluation context are combined. Merchant (1984), for example, predicts both a decrease in the use of results-oriented performance measures by superiors, and an increase in dysfunctional consequences when such performance measures are used, in the presence of high uncertainty.

On the empirical level, although there is hardly any study examining the direct effect of environmental uncertainty on the managers' perceptions about the PMERS - with the exception of the Hays' (1977) study that provided evidence of the same performance measures being perceived as less (more) appropriate by managers facing high (low) levels of environmental uncertainty -,

there is some evidence, albeit inconclusive, about the alleged adverse consequences of uncertainty on the behaviour of managers within the performance evaluation context. In a study in which the mediating role of environmental uncertainty was particularly addressed, Govindarajan (1984) found no direct connection between different evaluative styles, reward systems, and managerial effectiveness until the intervening effect of uncertainty was taken into account. Under conditions of high uncertainty, a correlation between more subjective methods of performance evaluation and managerial effectiveness was identified, essentially providing support to the argument that effective management controls are contingent upon the matching of the management control system in use and the environmental circumstances surrounding the organisation / unit. In a similar vein, the studies by Brownell (1987), Govindarajan (1988), and Mia and Chenhall (1994) presented results that appear to confirm the interaction effect of environmental uncertainty on the relationship between the use of accounting performance measures and managerial performance. Also Hirst (1983), in his study of the dysfunctional consequences arising from the reliance on accounting performance measures in highly uncertain task environments, was able to demonstrate a significant interaction of the level of uncertainty and the use of accounting-oriented performance measures affecting the managers' job-related tension. His results showed that under conditions of high (low) uncertainty, a greater reliance on accounting performance measures resulted in higher (lower) levels of job-related tension, suggesting that accounting performance measures would be appropriate under conditions of low uncertainty and inappropriate under conditions of high uncertainty. The linking of desirable rewards to such performance measures may presumably exaggerate these patterns.

However, other studies have provided evidence that contradict the above conclusions about the combined effect of environmental uncertainty and management control systems on the behaviour of organisation members (Hartmann, 1997). First, the findings about the interaction effect of uncertainty and reliance on accounting performance measures on job-related tension reported by Hirst (1983) could not be replicated by a number of subsequent studies (e.g., Brownell & Hirst, 1986 ; Imoisili, 1985, 1989 ; Brownell & Dunk, 1991 ; Lau et al., 1995 ; Ross, 1995). In addition, Merchant (1984), Brownell (1985) and Lau et al. (1995) did not find any evidence of the uncertainty factor affecting the relationship between the use of accounting performance measures and managerial performance, as Brownell (1987), Govindarajan (1988), and Mia and Chenhall (1994) did.

All in all, if something is quite evident from the literature review attempted in the last two sections, this is the recognition that the environment within which the organisation operates is an important factor that may influence both the design and the use of the organisation's management control system, as well as the subsequent behaviour (i.e., motivation and performance) of the managers who are working within this environment and under the given management control system. Despite, however, the apparent agreement on the importance of the environment and the environmental uncertainty factor, both the empirical findings and the theoretical propositions put forward by the various authors have not yet produced any consensus as to what particular configurations in the management control system's design apply in different environmental conditions. Indeed, as Otley (1980) points out, apart from a substantial body of agreed opinion within the contingency theory literature that there is no universally 'best' design for a management control system, few practical guidelines are given as to the impact of the different contingent factors on the design of the organisation's control system and on manager's behaviour. Overall, the available empirical studies provide confounding signals as to the links between specified contingencies and appropriate control systems characteristics.

2.6 Summary

In this chapter, an attempt was made to provide an overview of the literature in the area of measurement, evaluation and reward of managerial performance, with particular emphasis on the motivational function of the PMERS. Throughout this literature review, implicit was the realisation that control is fundamentally a behavioural issue, and that the ultimate criterion by which any system of control (such as the PMERS) should be assessed is behavioural (Emmanuel et al., 1990) ; that is, to what degree does such a system succeed in influencing managers to behave in desirable ways, or, conversely, how successful it is in not encouraging managerial actions which are contrary to the overall corporate objectives, whether in the short or in the long term. On these premises, in the earlier parts of the chapter both theoretical and practical considerations with regard to the design and the use of such systems of measures, standards of performance and related rewards were discussed to some length. In the later parts of the chapter, the theoretical proposition that there is no universally appropriate management control system that can be applied in all circumstances was considered, and the suggestion that the design of any control system is situationally specific was put forward. Within such a contingency theory perspective, the role of

environmental uncertainty as a critical factor that can critically affect the design of the company's PMERS, and through that, its motivational effectiveness was discussed and further assessed in the light of the available relevant empirical evidence. On the whole, this literature review has hopefully highlighted that the both the design and the implementation of any system of performance measures, standards and related rewards is a complex issue. In practice, it seems that the design of motivational contracts for middle-level management is a continuous effort on the part of the system's designer first to strike and then to maintain the right balance between the different ideal qualities of the PMERS (measures' accuracy and completeness, standards' clarity and attainability, rewards' attractiveness, etc.), given the environmental context within which the system is assumed to operate. It is evident, however, that despite the recognition of the necessity and criticality of these motivational contracts for middle-level managers, and the numerous prescriptions about how they ought to be designed and implemented in practice, the empirical evidence on their motivational effectiveness under different environmental conditions is yet sparse. It is essentially this research void that this study attempts to partly fill.

Chapter Three :

Theory Development, Concept Formation & Hypotheses Formulation

3.1 Introduction

This chapter draws on previous literature in the area of Applied Organisational Psychology in order to develop a theoretical framework that can bring together the four main variables under investigation in this study - that is, 1) the PMERS, 2) managerial motivation, 3) managerial performance, and 4) environmental uncertainty. The early parts of the chapter refer to the various attempts to operationally define the term motivation, as well as to the theoretical background behind the different motivational theories. The subsequent sections review the most influential theories of motivation, with particular emphasis on the process theories of motivation, the Expectancy / Valence theory, and the Porter and Lawler model on the basis if which the theoretical framework of the present study was developed. The late parts of the chapter examine in depth the expectancy model employed and the hypotheses deriving from it, whereas at the end the rationale for choosing the particular framework as the study's conceptual foundation is discussed.

3.2 Motivation : Operational Definitions

Etymologically speaking, the origins of the word motivation can be traced back to the Latin word "movere" which means to move (Collins English Dictionary, 1991). Within the field of Psychology, the term generally refers to the "...constant, never ending, fluctuating and complex process" (Maslow, 1954, p.69) through which human behaviour is activated.

Generally speaking, organisational psychologists have been mainly interested in the investigation of work motivation because of the alleged predicting ability and relationship of motivation with work performance and satisfaction, as well as because of its potential to contribute to the improvement of the jobs' design that can motivate and satisfy employees. Diachronic attempts to provide an adequate and complete description of the process of motivation have brought about a wide range of operational definitions and models, which admittedly present a number of conceptual differences that basically reflect the distinct theoretical traditions and underlying assumptions upon which these definitions are based (Madsen, 1965). In an early attempt, Murphy (1947) saw motivation as the "general name for the fact that an organism's acts are early determined by its own nature and natural structure" (p.991). Young (1961) argued that "the concept of motivation is exceedingly broad...and...[its] two most important aspects are the energetic aspect and...the regulation and direction [aspect]" (p.24). In his view the term refers to the process of arousing action, sustaining the activity in progress, and regulating the pattern of that activity. In a similar manner, Atkinson (1958 ; 1964) demonstrated that the function of arousal is closely related to the situational function, defined motivation as the contemporary (immediate) influences on the direction, vigour, and persistence of human action, and identified the study of motivation with the analysis of the factors that direct the individual's behaviour. Hebb (1955 ; 1958) seems to agree with Young and Atkinson about the central role of drive and arousal in the determination of motivation when he points out that "without a foundation of arousal, the cue function cannot exist...arousal...is synonymous with a general drive state" (p.249), and sees the drive as some process that provides energy of movement, although it may not determine what the movement will be. Jones (1955) asserts that motivation is concerned with how behaviour gets started, energised, sustained, directed, and stopped, and with what kind of subjective reaction is present in the organism while all this is going on. In a more behaviouristic spirit, Bindra (1959) underlined the goal-directed aspect of behaviour, and on these conceptual grounds motivation was defined, by Vroom (1964) as "...the process governing the choices made by persons or lower

organisms among alternative forms of voluntary activity" (p.6), and by Schneider (1985) as the energising and directing effort toward the attainment of objectives and outcomes.

In more recent definitional attempts specifically addressing job behaviour, Steers and Porter (1979) argue that the concept of motivation is a highly complex phenomenon that affects and is affected by a multitude of factors in the organisational milieu, fundamentally pertaining to questions of i) what energises human behaviour, ii) what directs or channels such behaviour, and iii) how this behaviour is maintained or sustained. Similarly, Berry and Houston (1993) contend that motivation accounts for the arousal, direction and persistence of human behaviour, and thus within the work setting attention needs to be drawn to what activates human behaviour (why individuals work), what channels such a behaviour (why they do a particular kind of job) and in what way such a behaviour is maintained (why they continue working at the same job usually for long periods of time or why they decide to quit their job). Likewise, Jewell (1998) claims that motivation pertains to the "various forces that produce, direct and maintain effort expended in behaviour" (p.188), and Campbell and Pritchard (1976) - in perhaps the most elaborate definition available - maintain that "...[work] motivation has to do with a set of independent / dependent variable relationships that explain the direction, amplitude, and persistence of an individual's behaviour, holding constant the effects of aptitude, skill, understanding of the task, and the constraints operating in the environment" (p.65). From the above literature review it becomes apparent that four components are present in virtually all of the definitions expressed - arousal, amplitude, direction and persistence -, although the relative importance attached to each of them clearly varies according to the different theoretical position that the different researcher decides to adopt and examine the phenomenon of motivation from.

Before proceeding to examine the main theories of motivation, it is worth noting that for almost every motivational theory expressed, there is a corresponding proposition of how these theories ought to be classified (Katzell & Thompson, 1990). One of the most prominent and widely accepted classifications has been offered by Campbell, Dunnette, Lawler, & Weick (1970) who differentiated between the substantive or content theories and the mechanical or process theories of motivation. Prior to considering each of these theories in some detail, the following section provides a brief overview of the theoretical background of the field of motivation, drawing from various areas such as personality, learning, and social psychology.

3.3 Theoretical Foundations of Motivational Theories : Then and Now

It is beyond the scope of this study to account for the historical context of the theories of motivation, however, a brief historical reference will enable the reader, first, to appreciate the philosophical and conceptual basis of the different motivational theories and thereby the sources of their major similarities and differences, and second, to become aware of the fact that most of the motivational concepts that preceded the empirical work in motivation were formed long before the emergence of the twentieth century.

From a historical point of view, the roots of motivational concerns were dated back to Greek philosophers, theologians of the medieval era, English associationists of the 19th century and other more recent thinkers and physiologists. As Cofer and Appley (1964) mention, Empedocles' and Anaxagoras' notion of dualism represents the earliest position of motivation, which later received its complete formulation by Plato and Aristotle. According to the notion of motivational dualism, human beings - in contrast to animals - were seen to be motivated not only by biological needs and desires but also by spiritual forces which, in combination with the aforementioned physical factors, caused the arousal, direction and persistence of human behaviour (Korman, 1974). Rationality and free will were therefore the dominant motivational concepts at that stage, in direct contrast to the later emphasis on terms such as needs and drives. However, it has to be noted that even at that point free will was not perceived as totally unaffected by bodily and environmental factors, a view shared by Descartes (1649) who, in essence, tried to link will with physical processes.

During the 19th century English associationists (otherwise referred to as utilitarians) widely used the principle of hedonism according to which the desire for pleasure and the realisation of pleasurable outcomes - and, conversely, the aversion for pain and the realization of unattractive outcomes - were perceived to be the primary motivators of behaviour. The central assumption of the hedonistic doctrine, i.e., that human behaviour is fundamentally directed toward outcomes that provide pleasure and away from those that produce pain, can be detected behind most of the contemporary conceptions of motivation (Atkinson, 1964), and its influence on modern psychology has been extensive (Vroom, 1964 ; Vroom & Deci, 1992). Bentham's 'hedonic calculus' indicated the conscious process that people followed so as to estimate the pleasures and the pains of their behavioural outcomes. Hence, the notion of rational decisions formed the basis

on which a new, cognitive-oriented, incentive-centered, type of motivational theory was formed (Campbell & Pritchard, 1976). Deriving from this theoretical tradition, which is fundamentally structured upon the premise that the content of mind is acquired through experience, the notion of associations of events influenced the learning element of almost all the subsequent motivational models developed thereafter.

The next significant conceptual advance beyond hedonism was made by Thorndike (1913) in his Law of Effect. Thorndike put forward the proposition that of several responses made to the same situation, those who are accompanied or closely followed by satisfaction to the individual will, other things being equal, be more firmly connected with the situation, so that when it (the situation) recurs, they (the responses) will be more likely to recur ; those which are accompanied or closely followed by discomfort to the individual will, other things being equal, have their connections with that situation weakened, so that when it recurs, they will be less likely to occur. Moreover, the greater the satisfaction or discomfort, the greater the strengthening or the weakening of the bond is expected to be. Hence, Thorndike's Law of Effect introduced for the first time the concepts of learning and past events into the theorisation of motivation, basically maintaining that cognition and previous stimulus-response connections can explain how present behaviour is directed toward satisfying events and away from painful ones. In essence, by strongly emphasising the impact of learning, Thorndike made an important step toward the development of a testable theory of motivation (Lawler, 1994).

Further in the course of philosophical and scientific progress, the psychology of motivation was also influenced by the Darwinian revolution and the major growth in physiology. The perspective of evolutionary theory (Darwin, 1859) cast doubt on the dualism assumption and put forward the major hypothesis that the motivational processes for both humans and animals could be directly attributed to instincts and, by implication, should be studied through them (Hall & Lindzey, 1957).

Overall, the work on motivation in the field of psychology has been dominated by two different views of the nature of man. The first that has its origins in the writings of Freud and the neo-Freudians represents man as being driven by inherited, conflicting, unconscious drives that cause him to behave in instinctual and, at times, self-destructive ways ; the second that can be traced back to the work of Plato, Aristotle, and more recently to the work of Descartes, Hobbes,

and Spinoza sees man as rational and aware of his goals, and as behaving in those ways that he feels will help him achieve these goals of his (Lawler, 1994). In essence, all theories of motivation in the field of psychology stem from either the one or the other philosophical paradigm.

3.4 Theories of Motivation : The Content and the Process

Both general and more specific theoretical formulations have been utilised through the years for the study of work motivation. As Berry and Houston (1993) point out, the former are able to cover a vast range of behavioural events and are adjusted to fit the work setting, while the latter - though more limited - are focused directly on aspects of work motivation. Despite the general or the specific orientation of the theories, most of the available theoretical models seem to be clearly dichotomised both in terms of their focus and in terms of the research questions they set out to address. Hence, according to Campbell and Prichard's (1976) conceptual framework, motivational theories can be distinguished with regard to whether they focus on the *content* of the motivational structure or the *process* of motivation. Content theories aim to identify the variables that exert influence on behaviour, and address questions relating to the needs that people strive to satisfy through their work and to the type of rewards that are more attractive to them. In their great majority, these theories and their proponents (Freud, Murray, McDougall, Maslow) have their roots in the clinical approach. On the other hand, process theories and those who defend them (e.g., Hull, Spence, Tolman etc.) are much more experimentally oriented, and are mainly concerned with trying to specify the processes and the dynamics that force a person to make choices, to expend varying amounts of effort, and to persist toward the attainment of a set goal.

The following sections attempt a literature review of the various theories of work motivation, with the intention of presenting a total picture of the contributions made by the different areas in the field of psychology. In this attempt, the dichotomisation of motivational theories into content and process has been maintained and, as a consequence, the related concepts (such as instincts, drives, needs, motives, incentives, goals, values, expectancies, etc.) and their operational definitions have been discussed within the content / process continuum.

As such, the following first part of this review focuses on the content of motivation and the nature of human needs.

3.4.1 The Content of Motivation

The emergence of the motivational concept of needs was inevitably influenced by Darwin's proposition that human and animal behaviour is aroused and directed by instincts. In essence, the notion of needs derived from the theory of instincts according to which people are generally motivated by their innate impulses. Notwithstanding the vagueness of the term instinct (Troland, 1928), it was initially adopted by James (1890) who argued for the existence of various instinctive tendencies such as the instincts of locomotion, imitation and sympathy etc. McDougall (1908), in his instinct-motivation theory, perceived instinct as "...an inherited or innate psychological disposition" (p.30). In contrast to James' mechanistic view of instincts, McDougall insisted on the purposive as well as the goal directed nature of the term. Having also departed from the absolute rationality of human beings, Freud's (1925) theory of motivation proposed two basic instincts - sex and aggression - as determinants of the arousal, direction and rigor of human behaviour. Since these unconscious, pleasure-oriented, instinctive urges were seen as responsible for much of motivated behaviour, the term unconscious motivation was coined.

Despite its initial acceptance, the instinct theory of motivation has received severe criticism through the years (Hilgard & Atkinson, 1967). As Levinson (1981) points out, although organisation behaviour was initially discussed and examined within a psychoanalytic context, the psychoanalytic/ Freudian approach has exerted little influence on the investigation of motivation in organisations ever since, primarily because it was originally developed with the intention of explaining patterns and cases of maladaptive behaviour. And although the idea of inherited instincts was dismissed in the end, Murray's (1938) articulation of the need theory of motivation gave a second wind to this approach. Murray saw instincts as being essentially learned, and he thereof introduced the concept of psychological needs as the individual's primary driving force, a concept that eventually became one of the most pervasive in the field of work motivation and one that still is very instrumental in theories that view the person as being pulled towards the attainment of attractive outcomes (Deci, 1992). He went on to conceptualise and put forward twenty needs (such as the needs for achievement, affiliation, aggression etc.) as potential behavioural motivators, which, although have been extensively used in the contemporary literature of organisational psychology, lacked empirical backing at the time.

The work of Murray was complemented by Maslow's (1943, 1954, 1970) Need-Hierarchy theory, a theory that also focuses on the content of the motivational structure and constitutes one of the most popular models of work motivation ever expressed. Having drawn from clinical observations, Maslow claimed that within human creatures a multitude of universally applicable physiological, safety, love, esteem and self-actualisation needs exist, needs that influence human behaviour. According to his theory, when one of these needs is present the individual will be motivated to the behaviour that will lead to the need being satisfied. Furthermore, Maslow stated that the aforementioned needs do not have an equal effect. In his view, both physiological and psychological needs exist in a hierarchical order of prepotency with higher-order needs emerging only after the satisfaction of the lower-order ones. In essence, there is a hierarchy of needs in which certain needs will dominate other needs until they are met, and once they are met they will no longer have any motivating effect (Lyne, 1995). Moreover, within Maslow's motivational framework need gratification is theorized to reduce motivation except in the case of the self-actualisation need where satisfaction is seen to be constantly increasing. As Howell (1976) comments, the implications of Maslow's theory for managers in the workplace are significant, since if top managers are aware of their subordinates' needs, they can identify their goal-objects and make the appropriate group interventions that will motivate them. What is more, the organization can benefit from the gratification of its employees' lower needs since - according to the theory - it is possible thereafter to motivate them indefinitely through their self-actualised needs. Nevertheless, Wahba and Bridwell (1975) point out some of the weaknesses of this theoretical framework when they claim that Maslow's explanation about needs' activation and gratification cannot be easily interpreted and his propositions regardless of their humanistic appeal receive little empirical support. Indeed, there is empirical evidence which, contrary to Maslow's assertions, shows that some satisfied needs become more important over time as compared to other unsatisfied ones (Hall & Nougaim, 1968 ; Lawler & Suttle, 1972). In addition, the accuracy and completeness of the proposed list of needs has widely and repeatedly been questioned.

A modified version of Maslow's need hierarchy theory has been proposed by Alderfer (1969, 1972). His ERG model postulates only three levels of needs (Existence, Relatedness and Growth), with the unsatisfied higher needs giving rise to the lower ones (what Alderfer refers to as frustration / regression process), and the possibility that two needs are activated at the same time. Nevertheless, Alderfer's admittedly more flexible theory of motivation does not really overcome

the weaknesses that the Maslow model presents, in the sense that it is equally - and perhaps inherently - inaccurate and incomplete as far as the choice of needs is concerned, whereas it also lacks supporting evidence.

The role of needs in motivation was also highlighted by Herzberg (1968), who looked at the content and satisfaction in the workplace and came up with the Two-Factor theory. In his theory of motivation, he essentially divided the factors that affect behaviour into two broad categories. These are the motivating factors (that include job-related variables such as achievement, recognition, a challenging job, promotion, responsibility, etc.) and the hygiene factors (e.g., company policies, work conditions, interpersonal relations, job security, salary, etc.). Hygiene factors are assumed to reduce job satisfaction and motivation, whereas motivating factors have the potential to increase the individual's job satisfaction and his / her motivation. In effect, the theory is built around two major premises :

i) there is a significant relationship between job satisfaction and motivation ; where job satisfaction is high, motivation will be high and vice versa.

ii) the factors that have a significant effect on job satisfaction - and thereby on work motivation - are quite different from those which have a negative effect.

In Herzberg's view, the hygiene factors - which basically serve the biological needs - can only cause less dissatisfaction, while it is the motivating factors, which are associated more with intrinsic needs for achievement, that can lead to higher level of satisfaction and motivation.

Overall, the major contention of the Two-Factor theory is that motivation to work is expected to increase only when the motivating factors are present in the work situation ; removing negative hygiene factors will have only a limited impact on motivation, as the strong and critical motivating effects arise from the motivating factors themselves. However, the existence of the hygiene factors are seen as a constraint on the effective working of the motivating factors, and need therefore to be eliminated or reduced to the extent possible (Lyne, 1995). All in all, the fact that motivation is seen as a product of universally common individual needs is noted as one of the theory's weak points, whereas the evidence indicating that all factors contribute to both satisfaction and dissatisfaction (Dunnette, Campbell & Hakel, 1967) casts doubts on the model's internal validity and reliability. On top of that, the possibility that the two-factors division proposed and confirmed by Herzberg is an artifact of the individual characteristics, sex

differences, and the organisational environment within which the particular research took place cannot be ruled out (Miner & Dachler, 1973).

McClelland's (1961) concept of needs was used in a less deterministic way. In the same theoretical vein with Maslow's (1943, 1954, 1970) Need-Hierarchy theory he also proposed a hierarchy of factors which motivate behaviour, however, his hierarchy was much less rigid involving only three needs : the need for achievement, the need for power, and the need for affiliation. Originally, McClelland, Atkinson, Clark and Lower (1953) focused on and examined the motivational role of the specific need for achievement within the organisational setting, on the basis of which high achievers were expected to be more motivated to accomplish some internal standards of excellence than low achievers. They claimed that the achievement needs can become strong motivators in individuals whose personality is such that they have a strong need to achieve, particularly if the work circumstances have the appropriate characteristics to bring out the maximum motivating effect (e.g., opportunities to take responsibility, environment within which the employee receives credit and recognition for taking initiative, etc.). In a similar way, power motivation and affiliation motivation may be particularly effective for certain individuals, operating under the right conditions. Worth noting is the point that both the need for achievement (nAch), and the needs for power (nPower) and affiliation (nAff) are conceived within McClelland's framework as acquired and learned, and thus may be increased - with obvious motivational benefits for the organisation - through training (McClelland & Winter, 1969). In addition, McClelland suggested that all three needs can occur at the same time, although one may be dominant over the others at any point in time. In other words, different people are likely to respond differently to the three aforementioned needs, simply because different people - or the same people at different times - may have a different order of needs in the hierarchy.

Overall, the content approach has accounted for the discovery, placement and importance of needs and has attempted to identify the specific factors that influence employees' behaviour. As they concentrate on input and not interaction, the proponents of this approach have diagnosed what rewards people desire, which needs are to be satisfied, and which incentives are the most powerful (Campbell & Prichard, 1976). However, content theories' implicit, but clearly erroneous, assumptions that

1) all people are alike, sharing by and large the same needs,

2) all situations are alike,

3) there is 'one best way' to motivate people,

have led to the underestimation of the individual's role. As Furnham, Forde and Ferrari (1999) showed, the reliability of using a content theory may be seriously affected by workers' individual differences. Regardless of their global motivational character, other personal and situational factors (e.g., nature of work, organisational position, culture, etc.) may have an equally significant part to play in the motivational process together with the gratification of the individual's needs. An overview of the most influential need theories is presented in Figure 3-1.

<table>
<tr><th>Maslow's
Need-Hierarchy Theory</th><th>Alderfer's
ERG Theory</th><th>Herzberg's
Two-Factor Theory</th><th>McClelland's
PAA Theory</th></tr>
<tr><td>Self-actualisation needs
(advancement, growth)</td><td rowspan="2">Growth needs</td><td rowspan="3">Motivators</td><td rowspan="2">Achievement needs</td></tr>
<tr><td>Self-esteem needs
(achievement, responsibility,
approval, recognition, status)</td></tr>
<tr><td>Social needs
(acceptance, affection,
belonging, interpersonal</td><td>Relatedness needs</td><td>Affiliation needs</td></tr>
<tr><td>Safety needs
(security, working conditions,
freedom from fear)</td><td rowspan="2">Existence needs</td><td rowspan="2">Hygiene</td><td rowspan="2">Power needs</td></tr>
<tr><td>Physiological needs
(salary, food, drink, shelter)</td></tr>
</table>

Figure 3-1 : Classification of Need Theories

3.4.2 The Process of Motivation

Essentially, the development of process theories of motivation represents a shift in the focus of scientific enquiry in the field of organizational psychology, a movement away from the identification of specific factors that are believed to be associated with high degrees of motivation in most individuals, towards more general formulations that allow different people to be motivated in different ways (Emmanuel et al., 1990). That is, process theories of motivation fundamentally recognize that individuals differ in a number of variables which "in a dynamic state affect the individual's behaviour and motivational force" (Steers & Porter, 1979, p.210), and it is therefore

the investigation of the *interaction* between these independent variables - and their combined effect on motivation, the main dependent variable - that constitutes their main subject matter. Drives, reinforcements and expectancies are some of the independent variables employed within the different process models that have been developed through the years to explain (predict) differences in dependent variables such as choice, effort and persistence in the work situation.

The term drive was first coined by Woodworth (1918) and it was later used in Hull's (1943) Drive-Reduction theory, which basically posited that drive states derive from tissue needs, generate behaviour, and their reduction has the potential to reinforce learning. Hull saw the motivational force as the multiplicative function of drive and habit (Effort = Drive X Habit), though later the incentive factor was added to the formulation. However, to the extent that within the particular motivational model behaviour modification was seen to be accomplished through the reduction of primary needs, there were a few - if any - practical implications for the management of motivation in the organisational context (Vroom & Deci, 1992).

Having also drawn upon Thorndike's (1911, 1913) law of effect, Skinner's (1953) Operant theory emphasised the consequences of positive and negative reinforcements on behaviour, and simply stated that employees' behaviours are likely to be repeated when they lead to positive outcomes. The role of rewards (and penalties) is fundamental within reinforcement theory as they are the key factors that are seen to cause behaviour to be repeated (or averted), provided that positive (or negative) reinforcement follows the expression of the particular behaviour that is intended to be encouraged (or discouraged). Although Skinner's Operant theory has been only implicitly motivational, it has nevertheless been frequently applied in organisational settings (Hammer, 1974), since it provides, first, a number of insights on how behaviour can be directed and controlled through reinforcements in practice, and second, a set of testable research hypotheses (predictions) about effort and task choice in the work situation. Deci (1975), however, criticises the behaviourists for being partial in their approach to motivation management, in the sense that they advocate a purely external (extrinsically-oriented) reward system which, although can gratify the individual's lower order needs, it totally disregards the motivational scope of its higher order needs. In effect, within this school of thought intrinsic rewards are largely ignored, and humans are thereby viewed as passive responders to the external environmental stimuli (Mitchell, 1974a).

On top of the previous psychological approaches to motivation, the more recent, cognitive-based, process theories have seen the individual's behaviour as being determined by the beliefs, anticipations and expectations that he / she holds about future events. Within the cognitive camp, expectancy theory, equity theory and goal setting theory seem to hold the most prevalent positions.

3.4.2.1 The Cognitive Perspective

The process by which motivation is activated is clearly illustrated in Adams' (1965) Equity theory, which basically maintains that individuals' work behaviour is affected by their thoughts, opinions and feelings as these are shaped by the particular environment within which they have to operate. Adams' theoretical framework is fundamentally structured upon the concept of cognitive consistency (Festinger, 1957 ; Heider, 1958) and on the social comparison processes (Festinger, 1954) on the basis of which behaviour is seen to be motivated when inconsistency generates tension or dissonance, and a restoration of consistency is subsequently sought. Within the organisational context, the previous notions were transformed into Adam's social driven and comparative process theory. According to his view, behaviour is motivated by the perceived equity (or inequity) of the social comparison, since employees have a tendency to relate the value of outcomes they receive (salary, bonus, recognition, job status, personal fulfilment, etc.) to the inputs (expended effort, skill, experience) they commit, and compare this outcome / input ratio of theirs to the ratio of others. In more detail, from an Equity theory perspective the individual's motivation in the workplace is seen to be mainly influenced by his / her preconceived ideas of what constitutes an equitable reward for the job that he / she performs, and what he / she actually receives, compared to those around him. When the normative expectations of the person making these social comparisons are violated - i.e., when he finds that his outcomes and inputs are not in balance in relation to those of others -, feelings of inequity are likely to result, and the person is expected to be motivated to take (desirable or undesirable) actions in order to restore equity, or at least reduce the level of inequity (Steers & Porter, 1979). This perceived inequity can be of two forms, which both are thought to lead to adverse motivational consequences. If the individual perceives an unfavourable inequity, dissatisfaction leading to anger, frustration, and motivation loss occurs ; if the inequity is perceived to be favourable, chances are that the individual will experience feelings of guilt. In any case, the perceived inequities are theorised to lead to motivational effects, with the individual being assumed to be motivated to remove or reduce the tension that is caused by the perceived inequity. Additionally, these motivational effects on the

individual are hypothesised to be directly proportional to his / her felt dissatisfaction with the inequities perceived (Lyne, 1995). Overall then, within Adam's conceptual model of organisational behaviour, employees' motivation is seen to largely depend on their perceived fairness of the work situation and, by implication, on the appropriate tailoring of the job parameters to fit the individual's perception of fair (Mowday, 1983).

Locke's (1968) Goal Setting theory, within which goals are considered to be the primary determinants of motivation and their attainment as being inherently rewarding and motivational, also falls within the domain of cognitive psychology. The theory's formulation makes explicit how effort and choice are governed by the individual's goals and intentions. In accordance with Locke's basic hypothesis, individuals who set high goals - or consent to high goals already established by others -, are likely to put in more effort in their job and exhibit a relatively higher job performance than individuals who set or are willing to accept low goals. However, as Howell (1976) points out, the definition of and distinction between high and low goals has always been problematic. Additionally, the fact that some people are more motivated and perform better when they set high goals (Garland, 1983) has been openly questioned and challenged by Mowen et al. (1981), who showed out that the efficacy of high-standard goals is dependent on the control system under which employees operate.

The above literature review serves to demonstrate the point that most of the goal-directed theories have been mainly concerned with the process of motivation rather than the specification of its content. They are therefore naturally placed under the umbrella of the process theories of motivation, which primarily focus on the individual's reactions to environmental (contextual and situational) variables, particularly considering the interactive effects between them (Steers & Porter, 1979). Overall, while content theories stress individual characteristics with particular emphasis on the critical role of needs in the determination of work behaviour, process theories seek to cope with the complexity of several job aspects and their influences on the individual's motivation. Despite, however, the justified attention paid to work-related variables (e.g., system of performance evaluation, system of rewards and incentives, organizational climate, leadership style, etc.), it has to be admitted that process theories tend to overestimate such factors, to the extent that individual parameters (such as the individual's needs, beliefs and attitudes) are largely overlooked. An alternative, more balanced, integrative approach, which has generated the greatest

amount of empirical research among the various cognitive theories of motivation, is provided by the expectancy theory that is presented in the following section.

3.4.3 The Expectancy Theory of Motivation

3.4.3.1 Conceptual Underpinnings

The Expectancy-Valence (E-V) theory has proved to be one of the most comprehensive, cognitive oriented, process theories. Deriving from Tolman's (1932) cognitive-based model of motivation and Lewin's (1936) motivational analysis of social behaviour, the expectancy model can be seen as a behavioural version of the rational choice model in economic decision making (Singer & Coffin, 1996), which, in line with classical economic theory, basically predicts that individuals always act to optimise the expected value (or valence) of the rewards that they expect to receive (Nadler & Lawler, 1977 ; Ferris, 1977). Overall, within the context of expectancy theory of motivation individuals are presumed to act as rational decision makers whose behaviour is guided by an analysis and weighting of the potential costs and benefits of alternative courses of action. This analysis is held to be based

(i) on the individual's preferences (valences) among the different resulting outcomes, preferences that believed to relate to the individual's needs,

(ii) on some sort of forward-looking beliefs (expectancies) about these outcomes, beliefs that are thought to be formed on the basis of the individual's previous experiences (Porter & Lawler, 1968).

More specifically, through the prism of expectancy theory individuals are mainly seen as reasoning beings that have expectations and beliefs about their future actions, as well as preferences among the various outcomes of these future actions. Accordingly, human behaviour is viewed as the outcome of the interactive processes between the individual's characteristics and his / her perceptions of the environment within which he / she operates.

In general terms, the theory is basically structured upon four major assumptions / building blocks with regard to the causes and mechanics of human behaviour. : rationality, preference, expectation and cognition. Within a 'utility maximisation' spirit, and fundamentally based upon a definition of man as goal oriented, need satisfying, and as one who interacts with his environment in a "rational" manner (Wanous, 1972), E-V asserts that people within organisations are motivated to perform an action when they perceive that the consequences of this action are favourable to them ;

that is, when they expect that the activity in which they engage will provide them with goals and outcomes that they need and, subsequently, value. In work situations in the organisational setting, individuals are faced with a number of possible behaviours, essentially with a number of choices to perform at different levels of effectiveness. The major postulate of expectancy theory is that, in such situations, people must be expected to behave in the way they think it will have the most favourable results for them, i.e., in the way they expect to maximise the potential benefits and minimise the potential costs associated with the situation. This criterion is assumed to govern their choices among alternative courses of action within organisations. Hence, individuals within the expectancy model are not seen as inherently motivated or unmotivated ; motivation largely depends on the situation they are in - situation that is itself determined by the structures provided by the organisation (such as the organisation's PMERS) - and how this situation is perceived to fit or not to fit their own personal needs (Nadler & Lawler, 1977).

Another fundamental - though implicit - assumption of E-V theory is that human behaviour in the organisational context is primarily conscious and goal-directed. Individuals are seen as largely autonomous beings that make conscious, well-calculated decisions about their behaviour in their job on the basis of their own needs, preferences and expectations of what the world is like today and is likely to be in the future. In effect, they are assumed to consider all the alternative plans of action, to use their 'mental maps' to decide upon the optimal course of action, and to eventually choose the behaviour that is more likely to lead them closer to attractive and gratifying outcomes (rewards) and away from undesired ones (penalties).

Of equal importance to the expectancy model of motivation is the premise that organisational behaviour is jointly determined by both individual and environmental factors. Essentially, individuals are seen to respond (rationally) to their work environment, drawing upon their psychological profile (attitudes, needs, expectations, values personality traits) as it has been developed by their past experiences. In this sense, the interaction of environmental, job-specific variables (supervisor's style, performance evaluation system, reward system, etc.) with the individual's personal characteristics is crucial within the expectancy framework, as different environments are likely to affect similar people in a totally different way, and different people may behave differently under similar environmental conditions. This assumption, deriving from the

alleged variation in human needs, desires and goals, significantly contributes to the individualistic nature of the model.

3.4.3.2 Basic Theoretical Formulations and the Porter & Lawler Model

The relevance of expectancy theory for the examination of work motivation was first demonstrated in the work of Georgopoulos, Mahoney, and Jones (1957), and later in the models presented by Vroom (1964) and Lawler and Porter (1967) who both saw motivation as a function of the employee's expectations that his behaviour will lead to valuable (for him) outcomes.

Classified as a process theory of motivation, expectancy-valence theory is typically concerned with specifying the processes and the dynamics involved in the determination of the individual's motivation and performance, and thereby posits in its classic version (Vroom, 1964 ; Lawler & Porter, 1967) that the motivational force on the individual to perform at a particular level of effort is a joint function of two types of perceptions, namely :

i) the perceived value (valence) that he / she assigns to the various outcomes and rewards associated with his / her job (V), and
ii) the perceived probability (expectation or expectancy) that effort on his / her part will lead to these outcomes / rewards (E→R).

Notationally, the latter can be expressed as follows :

$$M = f[V(E \rightarrow R)] \quad (1)$$

or

$$\text{Motivational Force} = \text{Valence} \times \text{Expectancy}$$

What is suggested by the above mathematical notation is that that Motivation (M) is determined by the interaction of two prime variables, namely :

- the V or Valence (Perceived Value) of Rewards (R), which is conceptually defined as the degree of desirability, or the degree of attractiveness (preference) the individual places on the Rewards (R) that he / she expects to receive in the context of his / her job, that is, the strength of his / her positive or negative affective orientation towards the particular rewards. Based on Lewin's use of the term (1935 ; 1938), this valence-of-rewards variable in the

model refers to the manager's anticipated (perceived) satisfaction associated with the various possible rewards or outcomes associated with his / her work.

- and the (E→R) or Effort-Rewards Expectancy, that is defined as the degree of subjective expectation (belief) that the individual has concerning whether or not the expenditure of his / her Effort (E) will actually lead to the attainment of the valued Rewards-Outcomes (R) that are associated with his / her job. In essence, this variable refers to the manager's subjective probability estimate regarding the perceived likelihood that the various, possible rewards that he / she desires will follow from putting forth certain levels of effort.

Overall, expectancy theory makes a simple - though attractively logical - prediction about human motivation (i.e., the intention to expend energy) in the workplace, on the basis of which the individual is expected to be motivated only when he / she

(i) perceives that the intended effort on his / her part will lead to a particular outcome

(ii) considers that outcome to be attractive to him / her.

Stated differently, from an expectancy theory perspective the motivational force on the individual to expend a higher amount of effort is greater,

(i) the more the individual believes that his / her effort will suffice for the attainment of specific outcomes / rewards (effort-rewards expectancy)

(ii) the more the individual values these outcomes / rewards (valence of rewards).

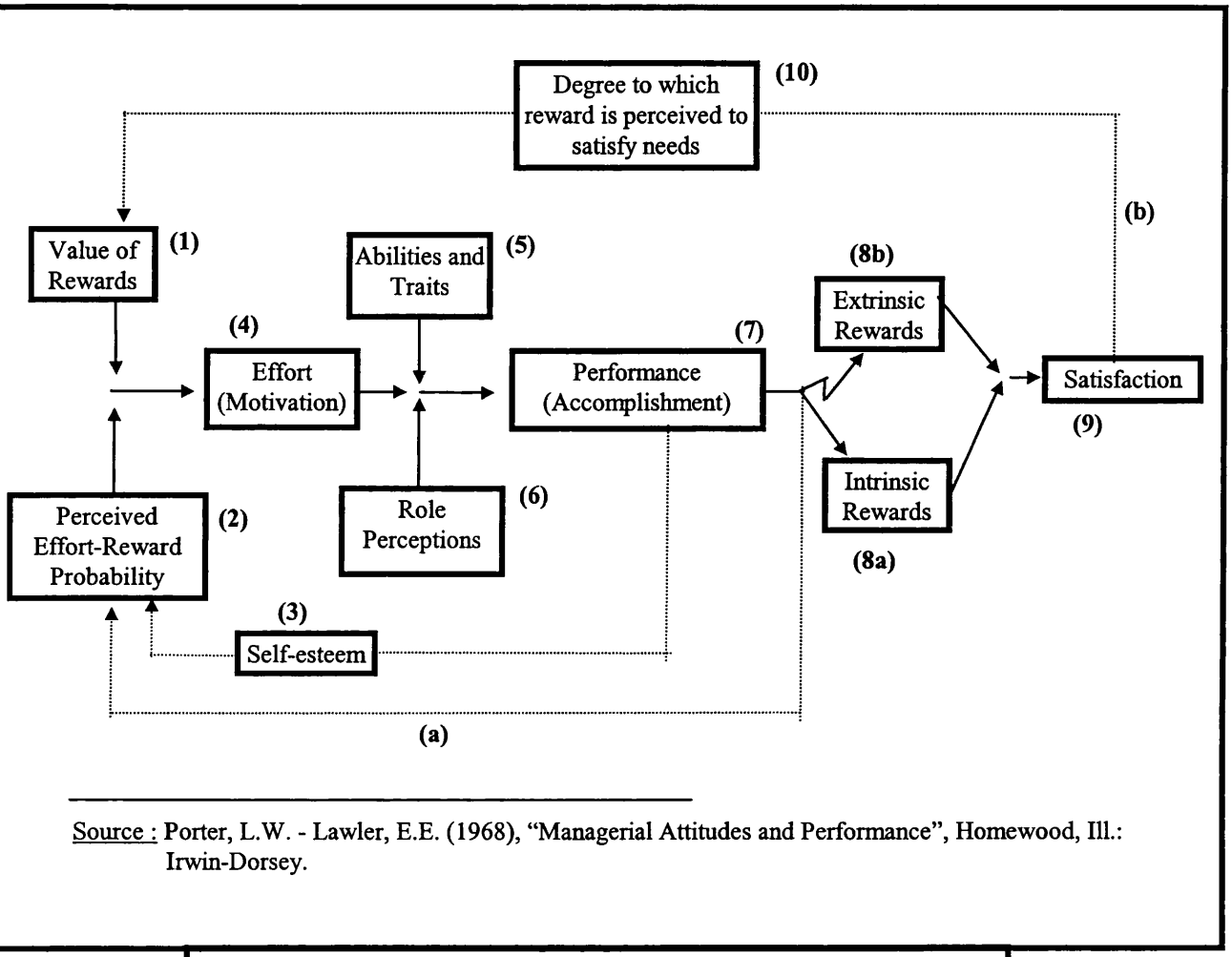
Worth emphasising at this point is the multiplicative aspect of the model, as depicted in equation (1). This multiplicative combination of the terms that are hypothesised to determine the individual's motivation follows from the recognition that unless all variables (valences and expectancies) are present in some degree, there will be no motivational force on the individual. In other words, each variable alone is a necessary but not a sufficient condition for motivation. If a person highly values the rewards potentially available in his / her work environment, but, at the same time, he / she believes that their attainment is in no way dependent on his / her effort expenditure, then this person's motivation is expected to be zero. In like manner, even if a person believes that his / her intended effort is likely to lead to the aforementioned rewards, he may still experience a low level of motivation if these rewards have very low value for him.

A number of alternative expectancy models have been developed through the years on the basis of the above central theoretical formulation (e.g., Atkinson, 1958 ; Edwards, 1954 ; Peak, 1955 ; Rotter, 1955 ; Vroom, 1964). And although in their totality they admittedly provide the most valid and comprehensive approach for the understanding of motivation and of the factors that affect it (Lawler, 1973 ; Nadler & Lawler, 1977), they have been rightly criticized

* for their ahistorical nature, that is, for the fact that all expectancy theory predictions about motivation are formed in terms of expectations and perceptions of *future* consequences with no regard to the individual's previous reinforcement history (Miner & Dachler, 1973),
* for their unreasonable assumption about the individual's unlimited cognitive ability, i.e., the assumption that the individual consciously and purposefully considers *all* the possible courses of action before he chooses the optimal one that is likely to maximise his 'pleasure' and minimise his 'pain' (March, 1972 ; Belcher, 1980), as well as
* for their overemphasis on extrinsic rewards, i.e., their one-sided approach to motivation through *purely* external incentives and their failure to recognise the motivational importance of potentially critical concepts such as drives, needs, intrinsic rewards, etc. (Halachmi & Holzer, 1987).

Porter and Lawler (1968) have acknowledged these inherent weaknesses and have attempted to address them in their work on motivation. Their model of organisational behaviour represents a refinement and extension of expectancy theory, essentially a more integrative approach to the investigation of the phenomenon of motivation in the workplace, which incorporates such issues as role perception, traits, extrinsic and intrinsic rewards, and the question of equity. In effect, this extension of the expectancy-valence model is a comprehensive, "over-arching" framework (Cooper & Makin, 1984) that provides the ground within which many of the dominant theories of management and motivation (such as Barnard's (1938) concept of the equilibrium between contributions and inducements, Maslow's (1954, 1970) Need theory, Adams' (1963, 1965) Equity theory, and Hackman's et al. (1975) Job-Design model) together with their relevant influential principles (such as the principles of reinforcement, goal-setting, job enrichment and enlargement, intrinsic and extrinsic motivators, job satisfaction, etc.) can be usefully fitted.

All in all, Porter and Lawler's (1968) model - graphically depicted in Figure 3-2 below - has been characterised by Campbell and Pritchard (1976) and others as the least complex and most comprehensible of the E-V models available.



Source : Porter, L.W. - Lawler, E.E. (1968), "Managerial Attitudes and Performance", Homewood, Ill.: Irwin-Dorsey.

Figure 3-2 : The Porter and Lawler Model

In essence, the model provides a set of clear-cut predictions about

a) the determination of the individual's work motivation **[4]**

b) the determination of the individual's job performance **[7]**.

With regard to the determination of motivation, the model postulates in its central expectancy theory core that an individual will select the behaviour to engage in and the level of effort to be exerted on the basis of the subjective probability estimate that effort will lead to certain outcomes / rewards (E→R) and the value (V) that he or she places on these outcomes / rewards (Ferris, 1977). Effort here refers to the amount of energy the individual is willing to expend in a

given situation, and is the variable in the model that most closely corresponds to the motivational component in typical discussions of the motivation of performance (Lawler & Porter, 1967), the variable that is basically intended to provide an explanation of how hard an individual works, rather than how effectively the individual performs.

All in all, the assumption is that at any particular point in time,

i) people have differing preferences among the various outcomes that are potentially available to them
ii) people have different expectancies about the likelihood that an action (effort) on their part will lead to certain outcomes
iii) the actions a person chooses to take are determined by the expectancies and the preferences that person has at the particular point in time. (Lawler, 1994).

It is therefore two factors - "antecedent attitudes" in Lawler and Porter's terminology (1967, p. 122) - that are seen to determine the effort **[4]** a person puts into his/ her job (i.e., his / her work motivation), namely :

- the momentary belief about the likelihood that a particular act will be fulfilled by a particular outcome / reward (effort-reward expectancy) **[1]**
- the person's affective orientation toward the particular outcome / reward (reward valence) **[2]** (Vroom, 1964).

In relation to the establishment and revision of the individual's perceptions and anticipations, the model introduces - in a dynamic, circular sense - the notion of feedback loops that run from the individual's past behaviour experiences back to the present determinants of his / her motivation (Nadler & Lawler, 1977). Although it is right to say that there is a certain degree of stability to the perceived expectancies and reward valences over time for a given person, it is also clear that these factors / determinants of the person's motivation can and do change, mainly on the basis of various situational and contextual parameters of the environment with which the person interacts (Lawler & Porter, 1967). As such, the individual's perceived effort-reward (E→R) probability **[2]** is assumed within the model to be directly influenced, apart from the given actual situation itself, by a number of other factors such as the communication of other people's perceptions of the person's situation, the person's self-esteem **[3]** (which essentially denotes the individual's beliefs about his / her ability to deal with and control the environment in which he / she operates (Argyris,

1964 ; Rotter, 1966)), and his / her previous personal experience in similar situations, that is, his / her past task successes (or failures) and the rewards (or penalties) that did or did not follow these successes (or failures) **[feedback loop a]** (Lawler, 1973). The latter factor essentially highlights the importance of cognition (learning) in the establishment of the person's (E→R) expectancy within any given situation (Graen, 1969). The exact manner by which outcomes acquire their preferential value (or valence) (V) is unspecified in the model, however, at least one way is suggested by the feedback loop **[b]** from 'Satisfaction' **[9]** through the 'Degree to which the reward is perceived to satisfy needs' **[10]** to the 'Value of Reward' **[1]**. What is implied here by Porter and Lawler is that rewards acquire valence as a function of their ability to "satisfy". In addition to the felt satisfaction with the reward (i.e., how much the individual thinks that the particular reward satisfied his / her personal needs in the past (Maslow, 1954)), the perceived equity of a reward (Adams, 1965) was later proposed to influence the reward's subsequent anticipated value (V) (Lawler, 1994).

As far as the individual's job performance is concerned, Lawler and Porter (1967) define it as "...the amount of successful role achievement" (p. 131), and posit it to be a joint function of the individual's ability to perform the job, his / her role perceptions with respect to the job, and his / her motivation to perform the job (Ferris, 1977). The underlying notion here is that effort (motivation) is not synonymous with performance (accomplishment). The other variables, which, in addition to motivation **[4]**, are theorised to affect task performance **[7]** are

(1) the person's ability **[5]**, that is, the individual's "...relatively stable, long-term characteristics (e.g., intelligence, personality traits, manual and psychomotor skills, etc.)...his / her currently developed power to perform" (Lawler & Porter, 1967, p. 129), essentially, his / her "...potential for performing some task which may or may not eventually be utilized" (Vroom, 1964, p. 198). In effect, these ability and trait patterns are seen as 'boundary conditions', as an upper limit on the level of the individual's performance.

(2) the person's perception of his / her role **[6]**, i.e., his / her definition and understanding of the "...kinds of activities and behaviours in which he feels he should engage so as to perform his job successfully...effectively, the more situationally-specific perceptions that determine the direction in which the individual applies his effort" (Porter & Lawler,

1968, p. 24). Under the influence of drive theory, Lawler (1971) further maintained that this perception is basically learned through previous experience.

The above theoretical proposition about the determinants of the individual's performance gives rise to a number of seemingly logical and intuitively sound working hypotheses. First, it suggests that for an individual with low ability, incremental increases in motivation are likely to yield smaller increases in job performance than when ability is high (Galbraith & Cummings, 1967). Second, it implies that a high level of motivation would have little effect on performance if the individual lacks a proper understanding of his / her job requirements (Lawler & Porter, 1967).

With regard to the relationship between performance **[7]** and rewards, the Porter and Lawler model maintains that the individual's performance has the potential to generate rewards, and, further, usefully recognises the existence of two types of rewards : intrinsic and extrinsic. On the one hand, intrinsic rewards **[8a]** are basically the rewards that are seen to satisfy the individual's higher-order needs (in the Maslow (1970) sense), tend to be administered by the individual to himself / herself and thereby result automatically from and have a direct relationship with his / her performance, and are essentially intrinsically satisfying (e.g., feelings of achievement, recognition, and self-actualisation). On the other hand, extrinsic rewards **[8b]** - most usually associated with pay, salary raises, year-end bonuses, fringe benefits and promotion - are thought of as satisfying more basic, lower-order needs, as being administered by external sources and agents (such as, the organisation, the supervisor, the PMERS, etc.), and, therefore, as having a more sporadic kind of relationship with the individual's performance. That is to say that, in contrast to intrinsic rewards, extrinsic (externally administered) rewards do not always follow successful task achievement.

Lastly, the model postulates that the result of the attainment of a reward **[8a,8b]**, as well as the individual's perceptions of the relative value of the obtained reward, lead to the individual experiencing a positive or a negative affective response, that is, a level of satisfaction or dissatisfaction **(9)** (Pritchard & Sanders, 1973 ; Nadler & Lawler, 1977). Porter and Lawler (1968) refer to satisfaction as a 'derivative variable', in the sense that its meaning and / or value is believed to be determined by the individual's comparison between what he / she considers as an equitable reward and the actual reward that he / she receives in the context of his / her job. To the extent that the perceived equitable reward exceeds the actual reward, the individual is likely to be

dissatisfied ; if the actual reward exceeds the perceived equitable reward, the individual is expected to be satisfied. The larger the difference between these two values, the greater the degree of dissatisfaction or satisfaction is assumed to be (Adams, 1963, 1965). In this sense, within the context of the Porter-Lawler model job satisfaction largely depends on the match between expected and obtained rewards. Satisfaction, in turn, has a general positive or negative impact on the future decisions the individual will make with respect to the value of promised rewards (the latter is highlighted in Figure 3-1 by the feedback loop b, connecting "Satisfaction" with "Value of Reward", as was discussed earlier). Since individuals are theorised to have the capacity to remember pleasant and unpleasant experiences (the hedonistic aspect of expectancy theory), and to attach these memories to particular contexts and stimuli, it is assumed that the individual will anticipate future, pleasant and unpleasant, outcomes and choose among (i.e., be motivated toward) his / her behaviour alternatives accordingly (the cognitive aspect of the theory). Hence the important role of satisfaction in the model.

Overall, the basic proposition put forward by the Porter and Lawler framework is that, apart from the relatively stable role of ability in the determination of performance, a number of antecedent attitudes / perceptions influence the individual's performance, primarily through the other two determinant variables of performance, i.e., the individual's motivation and his / her role perception. Two types of perceptions - namely, the perceived value of rewards, and the perceived probability that rewards depend on effort - are involved in determining the individual's effort (motivation), which together with the individual's understanding of his / her role (a particular type of perception in its own right) are seen to exert a joint effect on the individual's subsequent task performance. Thus, according to the model, if the intention is to modify performance, one way to do it is though changing the individual's job attitudes, specifically his / her perceptions about i) the value of the rewards that he / she receives, ii) the relationship between the effort that he / she expends and the rewards that he / she receives, and iii) the job role that he / she performs. These three types of attitudes are considered within the model to be the most crucial antecedent attitudes of effective job performance (Lawler & Porter, 1967).

3.4.4 The Expectancy Model of PMERS-Directed Behaviour

This section draws on the discipline of Applied Organisational Psychology in general, and on the previously reviewed literature in the area of Expectancy theory in particular, in order to develop a theoretical framework that can relate the four main variables under investigation in this study - PMERS, managerial motivation, managerial performance, environmental uncertainty -, and form the conceptual basis for the hypotheses proposed and summarised at the end of the section. Without losing sight of the primary aim of the particular research endeavour - which is to examine the effect of the PMERS on the behaviour of middle-level managers who are operating under differing conditions of environmental and task uncertainty -, the following paragraphs attempt to provide a detailed account of the way in which the aforementioned variables have been conceptually defined within the proposed model.

The expectancy framework upon which this research is structured has its conceptual roots in the work of and the expectancy-theory models put forward by Vroom (1964), Porter & Lawler (1968), and Jiambalvo (1979). Adopting a micro-behavioural perspective of analysis and basically building on the well-developed literature on Expectancy / Valence theory, Jiambalvo (1979) proposed his Evaluation model of Directed Job Effort, in essence a convincing explanatory theory about the impact of the PMERS on the manager's behaviour. Starting from the basic premise that the PMERS is the major organisational mechanism that links rewards with managerial motivation and performance, that is, the main motivational device that organisations use in order to induce their managers to increase the effort they expend in performing their tasks, he conceptualises the PMERS as a 3-step sequential process - parallel to the three stages identified in Hopwood's (1974) Measurement-Reward Process - that basically involves :

(1) defining the dimensions and standards of the job on the basis of which managerial performance is to be assessed

These evaluation dimensions, that essentially are general categories of job-related behaviours, are an effective means of 'operationalising' the complex concept of managerial behaviour into a system of measures and standards of managerial performance, a system that is typically abstracted from the top management's conceptions of the overall organisational purposes.

(2) assessing managerial performance along the determined evaluation dimensions

Measurements of the manager's actual performance on the predetermined evaluation dimensions (as these have been established in the previous step) are taken, and comparisons with the organisationally desirable performance standards on these dimensions are made in order to reveal the manager's overall contribution to the organisation's goals.

(3) dispensing rewards to managers based on the overall performance evaluations

A number of carefully selected rewards are finally awarded to the managers on the basis of their overall performance evaluation, i.e. on account of their contribution to the overall organisational goals as this is assessed by the established system of standards and measures of performance.

On the basis of the above conceptualisation of the PMERS, and always within an expectancy theory perspective, the theoretical model that is presented below principally maintains that the motivational force that is exerted by the PMERS on the manager's intended behaviour is mainly influenced by the manager's subjective beliefs ('expectancies') and preferences ('valences') concerning the consequences of his / her actions as he / she comes to interact with the Formal System of Performance Measures and related Rewards of the organisation within which he / she operates. Structured upon the conceptual premises of the typical expectancy-theory formulation as these were discussed in detail in section 3.4.3.2,

$$M = f\left[V(E \rightarrow R)\right] \quad (1)$$

but purposefully modified in order to incorporate the motivational impact of the PMERS, the analytical framework that underlies the present study brings together its three central behavioural variables of interest (i.e., the PMERS, the middle-level manager's motivation, and his/ her subsequent performance) by fundamentally positing that the manager's motivation to perform is jointly determined by five variables / managerial perceptions about the PMERS, namely :

→ the manager's subjective belief about whether or not he / she can actually reach the organisationally desirable standards of performance - as defined by the PMERS - if he puts effort to it ; that is, his / her perception concerning his / her ability to perform at the organisationally desirable level as this is identified by the PMERS
(Perception about the Attainability of Standards or Effort-Performance **(E→P)** Expectancy)

→ the manager's subjective belief about whether or not his / her actual performance is reflected completely in and captured accurately by the PMERS's measures, i.e., his / her perception regarding the ability of PMERS to capture and evaluate his / her actual performance in an accurate and just way
(Perception about the Accuracy of Measures or Performance-Evaluated Performance **(P→EP)** Expectancy)

→ the manager's subjective belief about whether or not the rewards he / she receives are effectively contingent on his / her PMERS-evaluated performance, that is, his / her perception about the efficacy of the PMERS to reward equitably and fairly his / her actual performance
(Perception about the Dependency of Rewards on Individual Performance or Evaluated Performance-Rewards **(EP→R)** Expectancy)

→ the manager's subjective belief about the value of the extrinsic rewards that are distributed to him / her by the PMERS
(Perception about the Value of Extrinsic Rewards or Extrinsic Valence **(EV)**)

→ the manager's subjective belief about the value of the intrinsic rewards that are associated with his / her job
(Perception about the Value of Intrinsic Rewards or Intrinsic Valence **(IV)**).

Notationally then, a manager's level of motivation may be expressed as a joint function of the above five expectancy variables / managerial perceptions about the PMERS :

$$M = f\left[\left(EV\ (E\rightarrow P)\ (P\rightarrow EP)\ (EP\rightarrow ER)\right) + IV\right] \quad (2)$$

Overall, the above model of managerial motivation[1] attempts to draw attention to the fact that for a well-designed PMERS - an ideal motivational contract in Merchant's (1989) terminology - to fulfil its motivational role and potential, it must not only possess in reality, but also be perceived by those it is suppose to motivate as possessing, a number of necessary attributes, specifically :

i) performance standards that are attainable,

ii) performance measures that are accurate and complete, and

iii) rewards that are, first dependent on the manager's evaluated performance, and second highly valued by the manager they are supposed to motivate.

In addition to this central proposition - which essentially constitutes the model's main link with management control theory -, a number secondary but equally important notions derive from the above theoretical conceptualisation of managerial motivation.

- According to the behavioural model underpinning this study, managerial motivation is basically determined by the manager's subjective beliefs about a number of perceived characteristics of the Performance-Measurement-Evaluation-Reward System (PMERS). The emphasis here is certainly on the importance of perceptions. Although the objective reality may have a quite instrumental role in establishing these critical (from a motivational point of view) perceptions, eventually, as Porter et al. (1975) point out, what actually exists does not really matter as far as the motivation of managers is concerned ; managers will respond to what they think it exists. In Nadler and Lawler's words, "...it is the perceptions of people that determine their motivation, not reality" (1977, p.32).

- Secondly, the model that appears in equation (2) insightfully incorporates the possibility of the manager's motivation being driven by factors other than the organisational (extrinsic) rewards (EV) that are administered through the company's PMERS. The inclusion of the variable IV (Value of Intrinsic Rewards) in the model puts forward the notion that motivation may also be triggered by a second type of rewards that are not provided by any external agent, but they are rather seen as being intrinsic (self-administered) to the person's own behaviour (Porter & Lawler, 1968). On that matter, Jiambalvo (1979, p. 440)

[1] A revised version of the Porter and Lawler Model, that incorporates the critical effect of the PMERS on the motivation of managers, is presented in Appendix A.

mentions that "although the evaluation process is thought to affect [motivation] directly, some job behaviours may be rewarding in themselves without being tied into the performance-reward system of the organisation", whereas a number of other researchers in the management control literature (e.g., House, 1971 ; Ronen & Livingstone, 1975 ; Rockness, 1977 ; Brownell & McInnes, 1986) have also emphasised and incorporated in their expectancy models the motivational value of intrinsic rewards, such as the feeling of satisfaction and fulfilment that an individual experiences when he / she accomplishes a goal or a set target in his / her work. Particularly therefore in the context of the middle-level manager's task environment, where feelings associated with goal achievement, recognition and self-actualisation from one's job are highly relevant, intrinsic factors can arguably have a significant motivational potential and need, therefore, to be specifically considered. As such, the expectancy model of managerial behaviour adopted here posits managerial motivation to comprise of two separate, but equally important, components :

- Extrinsic Motivation, stimulated by external forces [(EV (E→P) (P→EP) (EP→R))], and,
- Intrinsic (self-directed) Motivation [IV] .

- Particularly with regards to the extrinsic component of managerial motivation [(EV (E→P) (P→EP) (EP→R))], the model recognises the central motivational role of the PMERS in the organisational setting - as well as the fact that in this context the manager's perception about whether or not his / her effort will result in desirable rewards passes through the PMERS - and thereby departs from the typical expectancy theory formulation by breaking down the basic expectancy component (E→R) into three separate individual expectancy variables / managerial perceptions that essentially correspond to the motivational efficacy of the PMERS in the three major stages of the typical performance evaluation and reward process (i.e., the setting of performance standards (E→P), the evaluation of managerial effectiveness through performance measures (P→EP), and the allocation of organisational rewards on the basis of the manager's evaluated performance as compared to the predetermined standards (EP→ER)). Essentially, the model acknowledges Jiambalvo's basic notion that the PMERS is "the major organisational mechanism linking (the manager's) effort and rewards" (1979, p.437), as well as his argument that the motivational potential of the PMERS is largely dependent on its sequential nature. The latter is conceptually established by the multiplicative aspect of the model, as depicted

in equation (2). This multiplicative combination of the terms that are hypothesised in the model to determine PMERS-directed (extrinsic) motivation follows from the recognition that unless all variables (valences and expectancies) are present in some degree, there will be no motivational force exerted by the PMERS on the manager. In other words, each variable alone is a necessary but not a sufficient condition for motivation by the PMERS. If a manager highly values the rewards potentially available by the PMERS, but, at the same time, he / she believes that their attainment is in no way dependent on his / her performance as it is measured and evaluated by the PMERS, then this manager's PMERS-exerted motivation is expected to be zero. Likewise, even if a manager believes that the aforementioned rewards are really provided on the basis of his / her PMERS-evaluated performance, he may still experience a low level of PMERS-directed motivation if these rewards have very low value for him. This last realisation comes to highlight vividly the critical effect that the sequential nature of the PMERS can have on its motivational potential. If any of the individual linkages between

Performance →Evaluated Performance →Reward

are perceived to be weak by the manager, the PMERS cannot be expected to fulfil its motivational role.

On the basis of the previously expounded conceptualisation of managerial motivation in the performance evaluation situation, it is now possible to derive a number of testable hypotheses about

i) the first-level effect of the PMERS on the managers' motivation and performance, and

ii) the second-level (intervening) effect of uncertainty on the PMERS→motivation relationship.

3.4.5 Derived Hypotheses

With respect to the alleged effect of the PMERS-related perceptions on the middle-level manager's motivation and performance, the present study puts forward the following hypotheses :

Hypotheses 1-6 : PMERS-related Perceptions, Motivation and Performance

The motivational force on the individual middle-level manager - as exerted extrinsically by the PMERS and intrinsically by other job-related factors - to expend a higher amount of effort (energy) is likely to be greater

- *the more the manager believes that he / she is able to attain the standards of performance that are established within the PMERS (E→P - Motivation relationship)* **(H1)**
- *the more the manager believes that his / her actual performance is captured accurately and evaluated equitably by the measures employed by the PMERS (P→EP - Motivation relationship)* **(H2)**
- *the more the manager believes that the rewards that he / she receives by the organisation are contingent on his / her PMERS-evaluated performance (EP→ER - Motivation relationship)* **(H3)**
- *the more the manager values the extrinsic rewards that are administered to him / her through the PMERS (EV - Motivation relationship)* **(H4)**
- *the more the manager values the intrinsic rewards that are associated with his / her job (IV - Motivation relationship)* **(H5)**.

The higher the manager's level of motivation, the higher his / her level performance is likely to be **(H6)**.

As regards the intervening effect of perceived (environmental and task) uncertainty, directly on the antecedent PMERS-related perceptions / determinants of the middle-level manager's motivational force, and indirectly on his / her work motivation, the following hypotheses are proposed :

Hypotheses 7-8 : Uncertainty, PMERS-related Perceptions and Motivation

The higher the level of uncertainty the manager perceives in his / her work environment, the less confident he / she is likely to be about the possibility of attaining the standards of performance as these are established within the PMERS
(Uncertainty - E→P relationship) **(H7)**.

The higher the level of uncertainty the manager perceives in his / her work environment, the less convinced he / she is likely to be about the ability of the measures within the PMERS to capture accurately and evaluate properly his / her actual performance
(Uncertainty - P→EP relationship) **(H8)**.

The higher the level of uncertainty the manager perceives in his / her work environment, the lower his / her level motivation is likely to be
(Uncertainty - Motivation relationship) **(H9)**.

3.5 Justifying the Theoretical Choices

Throughout this research endeavour, a micro-behavioural perspective of analysis has been adopted. That is to say that, this research is concerned primarily with analysis at an individual level rather than at either an organisational or a societal level. In consequence, a variety of concepts, mainly borrowed from the prior literature and research on human behaviour at the micro-(individual- or small group-) level, have been brought together with management accounting and control issues.

The main reason behind this choice to focus on the individual manager and to give special emphasis on the decisions that he / she takes lies on the researcher's conviction that management control systems can not be developed in isolation, but must be designed on the basis of the expectations of how people within organisations will use and react to them. If management accounting systems are to be of any use to organisations fulfilling their control and motivation function, they must be related primarily to the manner in which the individual manager is observed

to work within these organisations. As Emmanuel et al. mention (1990, p.1) "historically, accounting information systems have been designed on the basis of highly mechanistic models of organisational functioning" that fail significantly to recognise, understand and incorporate the totality of human nature. Behavioural scientists have strongly and repeatedly criticise both accountants and management control system designers for concentrating exclusively on the technical excellence and sophistication of their systems and for not giving sufficient consideration to the impact of these control systems on human behaviour (e.g., Frey, 1992). Indeed, they have argued that this inattention to behavioural consequences may lead to the application of management accounting and control techniques that frequently do not achieve improved performance, and that ultimately may even hinder the accomplishment of the organisational objectives (Drury, 1996). Recently, distinguished academics in the field of management accounting and control have stressed that it is time to examine this important gap (e.g., Otley, 1995b), time to lay emphasis upon questions such as :

- What is the effect of management control systems on individuals ?
- How are individuals expected to react under particular management control systems, and what is the effect of individual differences ?
- How do changes in the contextual environment - in combination with the given management control system of the organisation - influence the behaviour of individuals operating within this organisation ?

Fundamentally, the starting point of this study is that the design of a management control system is"...a complex and ill-understood activity precisely because it involves an attempt to control - and motivate - a complex network of self-controlling human beings" (Emmanuel et al., 1990, p.12). In that sense, an awareness of the real complexity of human motives, needs, preferences, beliefs and expectations is clearly a necessary precondition if we are to acquire a wide understanding of how these management control systems can be effectively utilised to influence managerial behaviour within organisations, an awareness that can essentially be attained only through a micro-behavioural perspective of analysis. At its very outset, therefore, this study consciously and purposively posits the individual manager as its central focal point, and sets forth to throw some light to the complex phenomenon of managerial motivation via the PMERS, by giving special emphasis on the issue of human nature and on the human actors themselves. In effect, this research takes into account Vagneur, Wilkinson and Berry's (1995) suggestion that the

"integration of recent advances and well tested theory from the behavioural literatures would be useful" (p.5) and, accordingly, draws on the discipline of applied organisational psychology in order to come up with a behavioural model that can provide a sound conceptual basis for its needs.

Organisational psychology is the branch of psychology that is concerned with the study of behaviour in work settings and the application of psychological principles to changing work behaviour (Riggio & Porter, 1990). In essence, organisational psychology, by identifying the individual as the unit of analysis and the organisational situation as its setting (Landy & Trumbo, 1980), constitutes the middle ground between the science of psychology and the management techniques and practices for influencing human behaviour in the work place. It represents the most direct attempt to apply the basic psychological laws and methods of human behaviour in the organisational setting in order to :

i) identify, explain and understand the causes of individual behaviour in organisations
ii) predict how certain conditions - or the modification of these conditions - can affect the behaviour of the individual
iii) direct individual behaviour so that both the organisation's and the individual's goals can be achieved.

Primarily based on the underlying philosophy of individual differences, i.e. on the notion that a comprehensive understanding of organisational behaviour can only be attained from an analysis of the differences among individuals, organisational psychology not only recognises the significance of the human characteristics of the person (such as his / her needs, preferences, perceptions, feelings, motives, abilities, attitudes etc.) for understanding, predicting and controlling the organisational behaviour of the individual, but also provides both the scope and the research tools for examining these human characteristics as important variables affecting the individual's work motivation and performance.

Emerging from the field of organisational psychology, the Expectancy theory of Motivation - and Jiambalvo's (1979) model of Directed Job Effort in particular - has been chosen as the most relevant theoretical context within which the particular issue of interest of this research endeavour (i.e. the motivational effect of incentive schemes and performance measures on manager's behaviour) can be fully investigated. Fundamentally built upon the central assumption that human behaviour is to a considerable degree conscious, purposive and goal-directed, and that the

individual's actions are mainly influenced by the expectations he / she holds about future outcomes, Expectancy theory (commonly referred to also as E-V theory from the first letters of its two critical components, Expectancy and Valence) is essentially a rational, cognitively-oriented theory of motivation that has retained a prominent position in the psychological literature for quite some time as a well-developed, thoroughly tested, and therefore, reasonably valid model of the causes of work behaviour.

Overall, in its basic tenet the E-V model developed for the needs of the present research suggests that

1. most behaviour is consciously goal-directed (Lawler, 1994) ;
2. in general, every manifestation of human behaviour is most appropriately seen as a function of the person interacting with the environment he / she exists in [B = f (P,E)] (Lewin, 1935) ;
3. people have many conscious - often complex and competing - goals, expectations of how they will achieve these goals, as well as affective reactions to the outcomes that they perceive will help them achieve these goals ;
4. in the organisational setting of interest, people are motivated to perform an action when they believe that this action will provide them with rewards / outcomes that they need and, subsequently, value (Vroom, 1964) ; stated differently, the motivational force on a person to perform any given action in his / her work environment basically depends upon two - related to each other - questions that the individual asks himself / herself :
   → "If I expend the effort, will I actually get the reward ?" (effort-to-reward expectancy or (E→R))
   → "Is the reward offered, a reward I value ?" (perceived valence of reward or V).
5. in the particular context of managerial performance evaluation and reward, and given the central motivational role of the PMERS as the main organisational mechanism that combines standards, measures and rewards to influence managerial behaviour, the manager's motivation is jointly determined by five types of managerial perceptions about the PMER process, namely
   → his / her perception about the Attainability of Performance Standards (E→P)
   ("If I expend the effort, will I reach the organizationally desirable standards of performance ?)
   → his / her perception about the Accuracy of Performance Measures (P→EP)
   ("If I attain the performance targets, will this be reflected in my performance evaluation ?)

→ his / her perception about the Performance-Dependency of Rewards (EP→R)
("If achieve a positive performance evaluation, will I actually get the rewards offered ?)

→ his / her perception about the Value of the Extrinsic Rewards he / she receives (EV)
("Are the extrinsic reward offered, rewards that I value ?)

→ his / her perception about the Value of the Intrinsic Rewards associated with his job (IV)
("Are the intrinsic rewards of my work, rewards that I value ?).

The choice to employ an expectancy model for the theoretical and conceptual needs of this study is by no means accidental. There are a number of distinct characteristics associated with it that seem to promote the particular framework as the most suitable for the purposes of this research. More specifically speaking :

(1) Expectancy theory provides a very logical, simple, and thereby convincing explanation of how people are actually activated. In effect, the cognitive nature of the expectancy model - which is its main distinctive feature from the other theoretical frameworks within the field of organisational psychology - does a good job of capturing the essence of motivation, basically by introducing the concept of intended energy expenditure. The particular theoretical framework is effectively structured around the notion of current estimates on the part of the individual, concerning the chance of obtaining different types of - more or less - valued rewards. Drawing special attention to the elements of i) anticipation of future events and ii) cognition (learning), the model succeeds in offering a simple - yet compelling - description of the internal process through which the individual decides whether or not to engage in a particular behaviour, that is, in expectancy theory terms, whether or not to 'convert' his / her energy to effort.

(2) The underlying logic of Expectancy-Valence theory is not only clear and understandable, but it also seems relevant to the nature of the problem under investigation within this research. The given terminology and concepts of the theory appear quite fitting for the examination and understanding of the complexities of human behaviour, motivation and performance in the managerial setting. As Porter and Lawler (1968) point out, the elements of rationality and expectations within the expectancy model seems to closely resemble the kinds of cognitions that influence managerial performance, and, therefore, the theory appears most appropriate for realistically explaining the behaviour of managers. Overall, within the expectancy framework adopted in this study, managers - regarded as 'rationally'

thinking and behaving human beings - are assumed to make choices of behaviour in their work environment primarily on the basis of some forward-oriented expectancies, expectancies that in turn, are seen as being based upon the manager's previous experiences.

(3) Expectancy theory is structured upon a much more realistic view of man than most of the literature in the field of management accounting and control. Although in agreement with the - mainstream in organizational psychology - view of individuals as organisms capable of delaying gratification and dealing with abstract concepts (a view that is not recognised by other theoretical models that alternatively propose views of individuals that are driven by basic biological needs that need to be satisfied), the expectancy model also rejects as unrealistic the 'economic view of the nature of man', which, in short, presumes an unlimited ability of human beings to 'calculate' and become fully aware of all possible alternative behaviours and outcomes before they eventually make rational, optimal decisions based on clear-cut preferences among these outcomes. It alternatively puts forward an alternative view of man that seems to be closer to reality : The man as a "satisficer" and limited in his rationality. According to this view, which is strongly advocated by theorists such as Simon, March and Cyert (see, for example, Simon, 1957 ; March & Simon, 1958 ; Cyert & March, 1963), man's behaviour is more toward satisficing than toward optimising. That is, people generally look for a course of behaviour that is satisfactory or 'good enough' and when they find it, they act. They do not continue to search until they have considered all the possible alternative behaviours and all of the outcomes associated with these behaviours so that they can choose the optimal one, simply because it is beyond their cognitive response capacity and computational ability to consider adequately all the complexities of the real world in making their decision. Rather, because of the difficulty in arriving at an optimal strategy, people - making their decisions in "bounded rationality" (Simon, 1957) - seem to be oriented more toward satisfactory alternatives than toward optimal ones. This is essentially why in many cases their behaviour does not always appear to be rational to observers. Following this theoretical tradition, man in this study is seen as basing his actions, his behaviour, on his subjective - and most usually limited - perceptions, perceptions that are seen to be based both on his own individual characteristics and on the characteristics of the situation he is in.

(4) Expectancy theory also greatly facilitates the incorporation of motives like status, achievement, and power into a theory of attitudes, motivation and performance. The particular theoretical framework insightfully distinguishes between two kinds of outcomes, the extrinsic and the intrinsic rewards (see, for instance, Lawler & Porter, 1967), recognising as such a second form of reward that can potentially be used as an additional (or alternative) effective motivator in the process of directing managerial behaviour.

(5) Lastly, expectancy theory is rightly considered to be a behavioural version of the rational choice model in economic decision making (Singer & Coffin, 1996), a model that is thought of as providing a fairly adequate of the capitalistic reality. The major postulate of the theory that behaviour is determined by conscious choices of rational individuals that are basically motivated by their self-interest, is consistent with the assumptions underlying the theory of capitalistic economy, which is our main field of interest.

The particular version of expectancy theory that is utilised in this study - i.e., a properly revised version of the model of Directed Job Effort proposed by Jiambalvo (1979) - presents a number of distinctive qualities that make a strong case for its employment :

- Departing from the typical expectancy theory applications, this model is appropriately modified so as to incorporate and specifically address the motivational impact of the Performance Measurement Evaluation Reward System (PMERS), which is actually the prime subject matter of this research endeavour.
- In addition, the special attention drawn by the expectancy model employed in the present study to the sequential nature of the PMERS and to the importance that this sequentiality has for the system's motivational effectiveness, helps highlighting the role of the various factors - as well as the role of the critical linkages among these factors - that need to be considered in the process of motivating individual managers through the company's formal system of performance measures and related rewards.

All in all, the chosen theoretical framework seems to provide the necessary depth of behavioural analysis that is required for the investigation of the motivational dimension of the PMERS. Starting from the fundamental realisation that the explanation of the behaviour of people in work situations has to be sought in an examination of the individual - the focal point of the model - and his / her basic psychological processes, the particular conceptual framework establishes a sound

theoretical platform within which the effect of the PMERS on middle-level managers' motivation can be fruitfully examined.

Chapter Four :

Research Method & Methodology

4.1 Introduction

This chapter presents the research method and methodology of the study in two major parts. In the first part, the methodology adopted throughout this research is initially addressed, and, subsequently, a detailed account of the particular research design, as well as of the method employed in the study is given. The specific data-collection techniques that were utilised for the needs of this research endeavour are also thoroughly discussed. The second part attempts to put forward the rationale on the basis of which the particular methodology and method were selected, with particular emphasis given on the advantages that they allegedly carry. Finally, in this second section, an attempt is also made to refer to the consequent limitations stemming from these research choices made in method and methodology.

4.2 Method and Methodology

4.2.1 The research methodology adopted

At its outset, this research adopts a more positivist methodological paradigm. Fundamentally it is structured upon the ontological position that reality is external and objective (Easterby et al.,1996), and that the patterns and regularities that are exhibited in society are not simply random (Rose & Sullivan, 1996). In this sense, this study is primarily faced with the task of identifying the causal explanations and the fundamental laws that underlie these regularities in human social behaviour. Essentially, lying closer to the objectivist end of the subjective-objective continuum put forward by Morgan and Smircich (1980), the present research exercise takes on a methodological approach that is principally based on the ontological assumption that the social world is an evolving process, concrete in nature, but ever-changing in detailed form. Everything is seen as interacting with everything else, making as such the endeavour to find determinate causal relationships between constituent processes an extremely difficult task. At best, the world expresses itself in terms of general and contingent relationships between its more stable and clear-cut elements, and is seen as rather 'fluid', creating opportunities for those with appropriate ability to mould and exploit relationships in accordance with their interests. Within this ontological context, human beings are seen as existing in an ongoing interactive relationship with their contextual world, influencing and being influenced by it. The process of exchange that operates between the individual and his / her environment is essentially a competitive one : the individual is seen as seeking to interpret and exploit the environment to satisfy important needs, and hence survive. Accordingly, the relationships between the individual and the environment express a pattern of activity necessary for the survival and the well being of the individual. In turn, this organismic (alternatively termed as open system) view of the world gives rise to a corresponding epistimological framework that fundamentally emphasises the importance - and ideally proceeds on the basis - of monitoring this dynamic exchange process, i.e., the manner through which the phenomenon of interest changes over time in relation to its context (e.g., Burns & Stalker, 1961 ; Emery & Trist, 1965).

Following the tracks of the classic empirical social sciences research, and on the premises of the theory-testing, hypothetico-deductive approach, this study begins with theory - seen as a form of selective focusing, a means of separating out from a complex, confusing world those elements of social reality that warrant special attention and investigation -, and then aims, on the basis of the selected theory, to deduce and further test hypotheses about relationships which ought to exist

if the theory is correct. It is specifically within this positivist methodological context of theory statement, concept operationalisation, and hypothesis testing via prediction and empirical observation, that the present research endeavour progresses.

In effect, this study seeks to investigate the intricate phenomenon of motivation at the managerial level through the company's formal system of performance measures and related reward schemes. Towards this end, a conscious choice has been made, right from its start, to place and further investigate the particular management control issue of interest (i.e., managerial motivation through the PMERS) through the lens of a relevant theoretical context (that is, E-V Theory) that gives the social phenomenon of interest meaning from the viewpoint of a particular discipline, that of Organisational Psychology. Starting from this theory - that has been intentionally chosen so as to provide us with a basic meaning system, a language with which to comprehend, examine, and discuss the given research issue - a number of hypotheses have been derived, hypotheses that can be seen as logically emerging questions following from the theory itself, which, if answered, can provide us with a reasonably clear understanding of the phenomenon under investigation. In this sense then, this can be seen as a multi-disciplinary study, that is, as one that attempts to integrate prior theoretical and empirical work from both the fields of Organisational Psychology and Management Control in order to examine the research question in hand. On the whole, in the course of this study, and within the selected methodological path :

- An initial research problem has been identified in the body of the Management Accounting and Control literature - particularly associated with the area of the measurement, evaluation and reward of managerial performance - and, furthermore, has been considered from an Organisational Psychology-perspective in order to be formulated into a set of more specific, conceptual propositions.

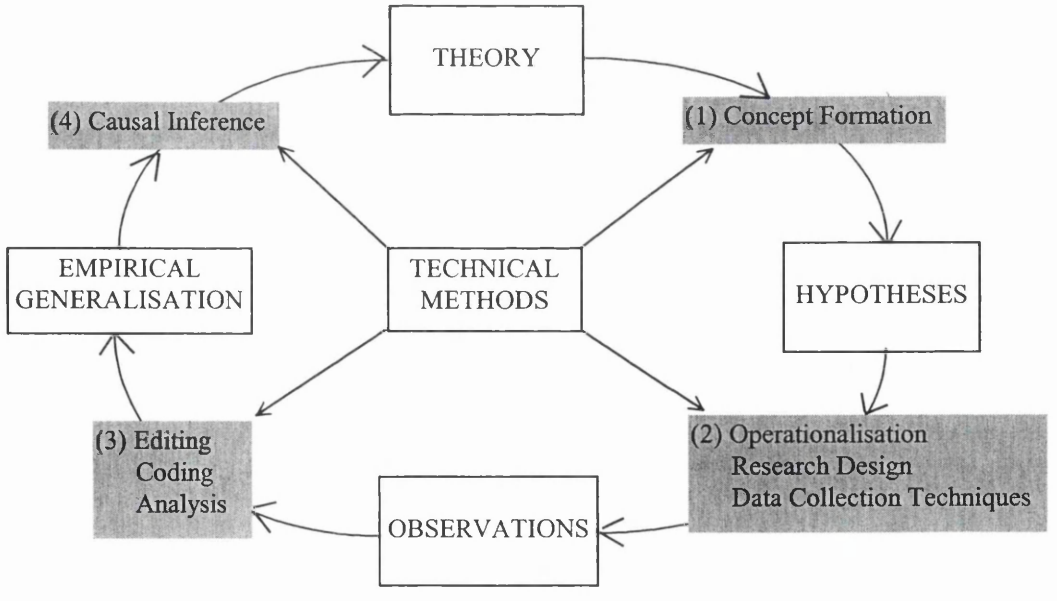
- The theoretical concepts that form the propositions have been initially clarified, then given a status as dependent, independent or intervening variables and, subsequently, have been operationally defined, i.e. they have been made amenable to measurement by being transformed from abstract, diffuse notions into pragmatic, directly observable and measurable indicators. Having decided upon the operational definitions of the concepts

involved, each conceptual proposition of the previous stage has been usefully restated in testable terms in order to develop a set of research hypotheses.

- On the basis of the concept operationalisation, and by means of observation, relevant data have been rigorously collected, processed and analysed in an attempt to falsify the stated hypotheses, that is, in an attempt to reach a conclusion about whether or not (and to what extent) the results obtained lend support to the hypotheses.

- Finally, an effort has been made, so that the conclusions drawn from the findings, as well as any further insights gained in the overall process of the study, are brought to bear on the initial research problem.

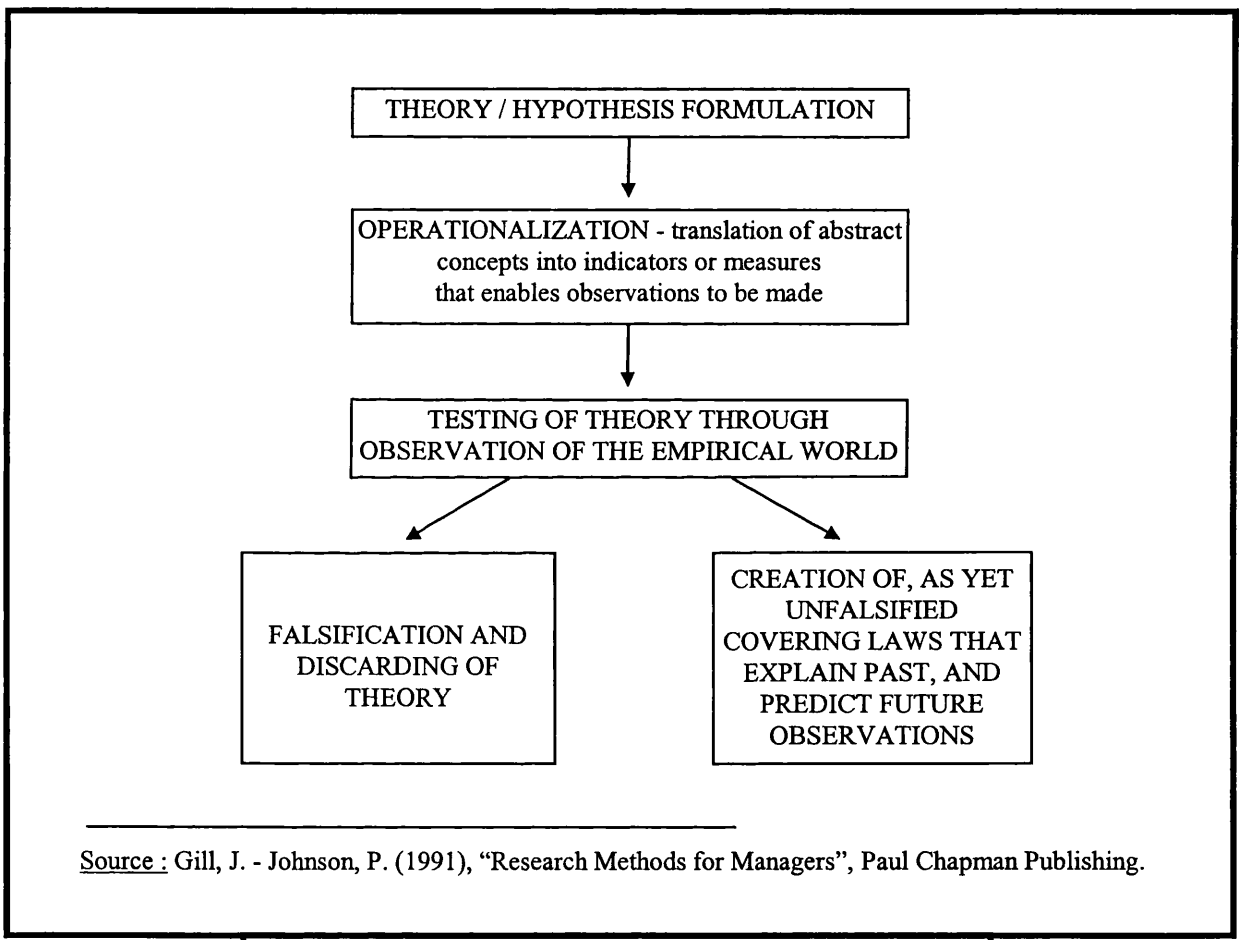
Essentially, this research has chosen to follow the underlying logic of empirical social science research, termed by Mann (1981) as 'socio-logic'. According to Mann's point of view, while there is not one methodology, there is a similar underlying logic to the process of social research - one 'socio-logic' - that should be evident in any research endeavour regardless of the choices made in method and methodology.



Source : After Mann, M. (1981), "Socio-logic", Sociology.

Figure 4-1 : The logic of social research or 'socio-logic'

As illustrated in Figure 4-1, socio-logic refers, in essence, to the knitting together of and the constant interplay between theory, concept formation, hypotheses derivation, operationalisation, observation, data collection and analysis, causal inference, and back to theory again, and it is within this overall logic that this study generally aims to proceed. If one wants to be more accurate, the present research particularly concentrates on the deductive, theory testing part of the socio-logic chain process shown in Figure 4-1, that essentially starts from the formulation of hypotheses and is completed with the empirical generalisation of the findings of the research to wider populations and settings, as, perhaps more relevantly, the figure below depicts.



Source : Gill, J. - Johnson, P. (1991), "Research Methods for Managers", Paul Chapman Publishing.

Figure 4-2 : The process of deduction

4.2.2 The Design of the Research

4.2.2.1 Research Objective

Formally stated, the prime objective of this study is to investigate the effect of the Performance Measurement, Evaluation and Reward System (PMERS) on middle-level managers' behaviour

under different environmental conditions. In simpler terms, this work is an explanatory piece of research that is interested in the consequences of the PMERS on the motivation and performance of middle-level managers who are operating within diverse business environments.

Essentially, the main purpose of this research is to examine, on an empirical basis, the presumed relationship(s) between :

i) a number of 'antecedent' managerial perceptions (attitudes) concerning the Performance Measurement Evaluation Reward System (PMERS)

ii) the manager's perceptions about the Uncertainty that he / she is faced with in his / her internal and external environment

iii) the manager's Motivation and subsequent Task Performance.

Diagrammatically, the latter can be depicted as follows.

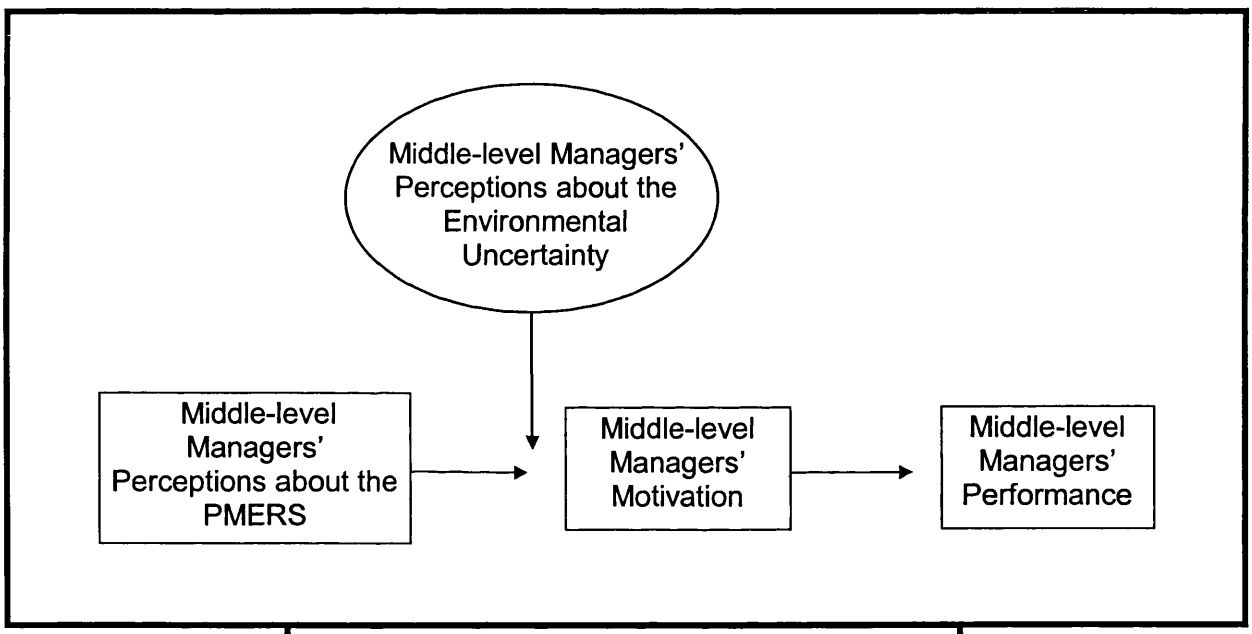


Figure 4-3 : The relationship under investigation

4.2.2.2 The Hypotheses under Test

Any hypothesis is nothing more than an untested theoretical statement (Rose & Sullivan, 1996), or a prediction (Greene & D'Oliveira, 1982), about the nature of the relationship(s) (most usually of association or causation) between concepts within a given theory.

As Rose and Sullivan (1996) point out, the testing of any predicted hypothesis in a scientific manner presupposes, in the first place,

i) a precise statement of the supposed relationship between the concepts under investigation, as well as,

ii) a precise statement of the data which would need to be collected for the hypothesis testing to take place.

In this study, two different sets of testable hypotheses are identified ; one examines the impact of the PMERS on managers' motivation and performance, and the second addresses the intervening effect of environmental uncertainty on this relationship. In more detail, the first set of hypotheses refers to the alleged impact of the manager's perceptions about the PMERS on his / her motivation and performance. These hypotheses basically propose a positive relationship between each of these PMERS-related managerial perceptions and the manager's motivation, as well as a positive relationship between the manager's motivation and his / her performance.

Hypotheses 1-6 : PMERS-related Perceptions, Motivation and Performance

H1 : Middle-level managers who believe that they are able to attain the standards of performance - as these are established within the PMERS -, will experience a higher level of motivation than those middle-level managers who do not maintain this belief.

H2 : Middle-level managers who believe that their actual performance is captured accurately and evaluated equitably by the measures employed within the PMERS, will experience a higher level of motivation than those middle-level managers who do not maintain this belief.

H3 : Middle-level managers who believe that the rewards they receive by the organisation are contingent on their PMERS-evaluated performance, will experience a higher level of motivation than those middle-level managers who do not maintain this belief.

H4 : Middle-level managers who value highly the extrinsic rewards that are administered to them through the PMERS, will experience a higher level of motivation than those middle-level managers who do not value these rewards.

H5 : Middle-level managers who value highly the intrinsic rewards that are associated with their job, will experience a higher level of motivation than those middle-level managers who do not value these rewards.

H6 : Middle-level managers who experience a high level of motivation, will exhibit a higher level of job performance than those middle-level managers who experience a low level of motivation.

The second set of hypotheses attempts to capture the presumed intervening effect of environmental uncertainty, as perceived by the manager himself, directly on his perceptions about the PMERS, and - to the extent that these PMERS-related perceptions are seen as determining the manager's motivation - indirectly on his motivation and subsequent performance. Essentially, with respect to the motivational effectiveness of the PMERS under conditions of environmental uncertainty and unpredictability, this study examines the following hypotheses :

Hypotheses 7-9 : Environmental Uncertainty, PMERS-related Perceptions and Motivation

H7 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will regard the PMERS-defined standards of performance as less attainable, than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

H8 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will regard the PMERS-employed measures of performance as less able to capture accurately and evaluate properly their actual performance, than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

H9 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will experience a lower level of motivation than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

4.2.2.3 Variables Identification : Dependent, Independent, Intervening and Extraneous Variables

Strictly speaking, a variable is a qualitative or quantitative entity that can take on different values. In the social sciences in particular, the term most usually refers to measurable attributes which are fixed for each person or other social entity, but which are observed to be at different levels, amounts, or strengths across samples and other aggregate groups (Rose & Sullivan, 1996).

Variables - which are, in essence, the basic means of measuring theoretical concepts in a way that renders these concepts amenable to observation and analysis - are often classified, for convenience, as independent, dependent, intervening and extraneous with :

- the independent (also referred to as explanatory or experimental) variables being the elements or phenomena whose characteristics or variations notionally shape and determine (i.e. 'cause' changes in) the dependent variable(s)

- the dependent variables being the elements or phenomena whose characteristics or variations are to be understood, explained or predicted by reference to the presumed influence ('effect') of the independent variable(s)
- the intervening variables being the elements or phenomena whose characteristics or variations can provide an explanation for the observed relationship between the independent and the dependent variables
- the extraneous (otherwise termed as confounded or uncontrolled) variables being the 'free-floating' elements or phenomena which are confounded with the independent variable(s) of the study and can therefore affect the obtained results producing serious misinterpretations if their impact is not controlled for.

Although this independent-dependent-intervening-extraneous categorisation is best illustrated in experimental studies where the cause-effect relationships are clear-cut, with the independent variable being directly and systematically manipulated by the experimenter so that the effect on the dependent variable can be observed, many research-design scholars contend that the above variable identification should be maintained even if the study is non-experimental. As Spector (1981, p.11) indicates, "...it is the supposed relationship among the variables [as defined by the study's theoretical framework] that determines variable type and not the experimental [or non-experimental, for that matter] nature of the study". The variables involved in the present study can be classified as follows :

Dependent Variables : The phenomenon whose variation this research primarily seeks to understand and explain is

a) Managerial Motivation, and

b) subsequent Managerial Performance

at the middle level of the organisational hierarchy. As such, these two factors (i.e., middle-level managers' motivation and middle-level managers' performance) constitute the study's main dependent variables.

Independent Variables : On the basis of the expectancy model of managerial behaviour underlying this research (see Chapter 3 - Theory Development, Concept Formation and Hypotheses Formulation), five factors can potentially explain the changes in the dependent

variables of interest (that is, managerial motivation and subsequent performance). These causal variables, whose alleged (both isolated and combined) influence upon the identified dependent variables is essentially the main issue under investigation in this study, refer to a number of managerial perceptions about the company's formal Performance Measurement, Evaluation and Reward System (PMERS), specifically :

a) the manager's subjective belief about whether or not he / she can actually reach the organisationally desirable standards of performance, as these are defined within the PMERS (E→ P or Effort-to-Performance Expectancy)
b) the manager's belief about whether or not his / her actual performance is captured accurately and evaluated equitably by the measures employed by the PMERS (P→EP or Performance-to-Evaluated Performance Expectancy)
c) the manager's belief about whether or not the rewards he / she receives by the organisation are contingent on his / her PMERS-evaluated performance (EP→ ER or Evaluated Performance-to-Extrinsic Rewards Expectancy)
d) the manager's affective orientation (perceived preference) towards the extrinsic rewards that are administered to him / her through the PMERS (EV or Valence (Perceived Value) of Extrinsic Rewards)
e) the manager's affective orientation (perceived preference) towards the intrinsic rewards that are associated with his / her job (IV or Valence (Perceived Value) of Intrinsic Rewards).

These five PMERS-related managerial perceptions represent the basic independent variables of the study.

Intervening Variable : Lastly, the factor whose variation is assumed throughout this research to have a significant moderating effect on the relationship between the identified independent and dependent variables (i.e., the relationship between the aforementioned PMERS-related managerial perceptions and the manager's motivation and performance) is the intervening variable of Perceived Environmental Uncertainty.

On the whole, all the proposed relationships between the study's independent, dependent, and intervening variables are depicted in Figure 4-4 :

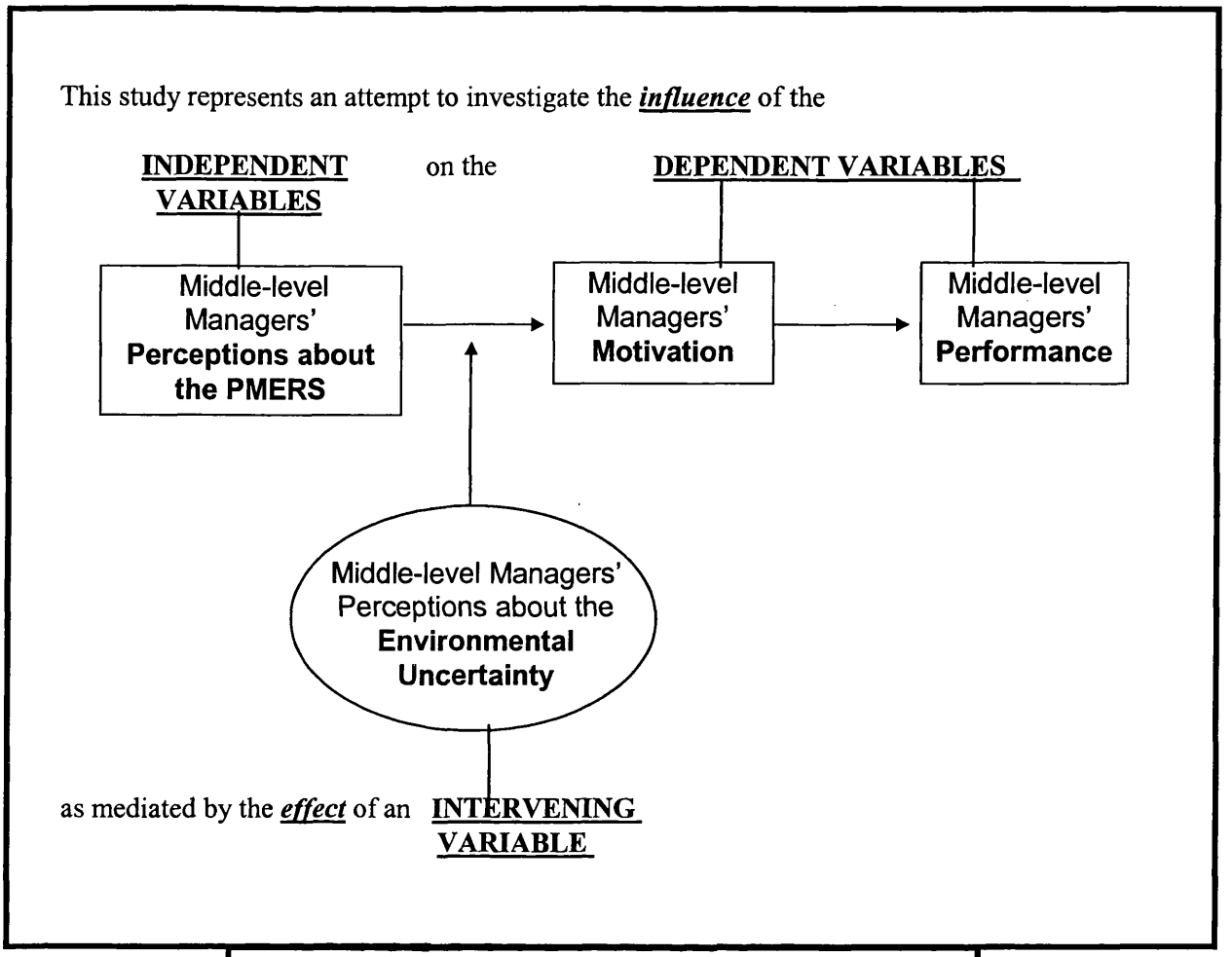


Figure 4-4 : The relationships between the nominated variables

4.2.2.4 The Basic Research Design Approach : A Correlational Field Study

Most usually, the choice of which particular design to use is, to a large degree, dictated by a number of different factors such as

- the type and nature of the research problem under investigation,
- the form of the questions that are to be answered in the process of this investigation (i.e., whether these questions are 'applied' or 'theoretical'),
- the audience we want the results to be presented to and assessed by,
- restrictions on the access to certain field research settings, and / or
- restrictions on the number of subjects available to participate in the study.

In principle, the central point of any research design, is to provide "...suitable frames of reference so that an appropriate context is provided in which relevant data can be collected, reliable and valid results can be obtained, and relatively unambiguous statements can be drawn. The aim is to

move our conclusions about causal processes from the realm of the plausible and possible to the convincing and compelling" (de Vaus, 1996, p.34). In a similar tone, Galbraith and Cummings (1967) point out that the primary concern of the research design, apart from operationalising the concepts, is to eliminate alternative explanations of results brought about by implicit assumptions in the statement of the hypothesised propositions. The control over these alternative explanations, they argue, begins with the selection of the sample and continues throughout the course of the research. Particularly with explanatory studies such as this one then, that are mainly interested in developing conclusive explanations of the patterns in the data collected, paying careful attention to research design is an important way of ensuring that other possible alternative explanations of the data are eliminated and of giving, as such, more confidence to the validity and reliability of the findings of the study.

For the purposes of this particular research project, a correlational, cross-sectional design was chosen. The correlational design adopts a 'purely observational' approach in examining the phenomenon of interest. What the latter implies is that, in distinct contrast to the experimental method which is largely characterised by the direct manipulation and control of variables by the experimenter, in a correlational field study the investigator attempts to assess the impact that changes in one variable have on another by simply observing what happens when these variables change 'naturally' (i.e., without the intervention of the researcher) in the population of interest. Overall, the correlational, cross-sectional approach seeks a general, though partial, nomothetic explanation of what causes some phenomenon by looking at variation in that variable across a class of cases, and looking for other characteristics which are systematically linked with it. Ultimately, it aims to draw causal inferences by a careful comparison of the various characteristics of cases (de Vaus, 1996). Typically, in such a research design, measurements are taken on a carefully selected group of individuals or social entities at one single point in time, and relationships are then determined among the measures (Spector, 1981). In this sense, the correlational, cross-sectional study is seen as quite suitable for establishing whether two or more variables tend to be related (associated) at a fixed point in time.

4.2.2.5 Further Research Design Considerations : Research Site, Sample Selection, and Data Collection Procedures

The actual research design of the present study initially involved the identification of a single large organisation, with a considerable number of geographically dispersed organisational units (or, alternatively, a wide variety of functional / product areas), which employed uniformly - all along its organisational structure - a formal system of measures to evaluate and reward the performance of its middle-level managers. The underlying logic behind this central research design consideration was that, in order to test the study's designated hypotheses there was a need

i) to isolate and control the effect of the PMERS by maintaining the PMERS-variable constant. To be able to collect comparable data and draw any valid and reliable conclusions about the middle-level managers' PMERS-related perceptions and their effect on the managers' motivation and performance (hypotheses 1-6), the same system of performance measures and incentive schemes would have to apply to all middle-level managers examined.

ii) to arrange that there is some variation in the Environmental Uncertainty-variable. To consider the impact of uncertainty on the middle-level managers' PMERS-related perceptions and motivation (hypotheses 7-9), these perceptions needed to be examined both in the presence and in the absence of environmental uncertainty.

Overall, the intention was, first, to secure access to a diversified organisation within which a uniform PMERS would be employed for the assessment and reward of its middle-level managers' performance, and, subsequently, to collect data from different cross-sections of middle-level managers (presumably experiencing different levels of uncertainty in their internal and external environment) on their

- perceptions about the actual Performance Measurement Evaluation and Reward Process (i.e., the study's independent variables)
- perceptions about the Environmental Uncertainty they feel they are exposed to
- (that is, the study's intervening variable)
- Motivation and Performance (i.e., the study's dependent variables),

so as to investigate the extent to which variations in middle-level managers' motivation and subsequent performance could be explained by the variations in the managers' PMERS- and Environmental Uncertainty-related perceptions, as prescribed by the hypotheses of the study.

In the event that more than one organisations with the aforementioned characteristics could be identified and gained access to, a series of comparative case studies was intended, in the totality of which overall patterns of managerial behaviour in different performance evaluation settings could be examined.

Towards this end, by mid-June 1999, a number of 40 companies were initially targeted as potential case studies from the Financial Times UK's Top 100 list on the basis of two main criteria :

* they all had to be large, highly diversified organisations, with a considerable number of organisational units (or a wide variety of functional / product areas), so as to provide a relatively large and heterogeneous sample of middle-level managers exposed to different environments and varying degrees of environmental uncertainty
* they all had to employ a uniform system of performance measures and incentive schemes to measure, evaluate, and reward the performance of their middle-level managers throughout their organisational structure, so that cross-manager comparisons with respect to their motivation and subsequent performance could legitimately be made within each company.

These 40 selected companies were contacted, through their Finance Director and their Chief Executive Officer (or their Chairman) in each case, first by letter (see Appendix B) and at a later stage through the telephone in order to ascertain any interest on their behalf in taking part in the research. As shown in the table below, out of the 40 companies contacted, only one expressed a definite interest in the study. Twenty-two companies (55% of the companies contacted) kindly declined to participate in the project for various reasons (the most popular one being their corporate policy of not taking part in independent studies), whereas 17 companies (42.5%) did not respond within the next fifteen days after the first contact letter and had to be followed up through the telephone - with no positive result, nevertheless, in any of these seventeen cases.

Company's Name	C.E.O. / Chairman (*) contacted	Finance Director contacted	Company's Response		
			Positive	Negative	Not Responded
Allied Domecq Plc	✓	✓			?
Asda Group Plc	✓	✓		×	
Associated British Foods Plc	✓	✓		×	
Astrazeneca Plc	✓	✓		×	
Bank Sigma	✓	✓	!		
Barclays Plc	✓*	✓		×	
Bass Plc	✓*	✓		×	
Boc Group Plc	✓	✓		×	
Boots Company Plc	✓	✓		×	
British Aerospace Plc	✓	✓			?
British Land Company Plc	✓*	✓			?
Cable & Wireless Plc	✓	✓			?
Cadbury Schweppes Plc	✓	✓		×	
CGU Plc	✓	✓		×	
General Electric Company Plc	✓	✓		×	
Granada Group Plc	✓	✓			?
Great Universal Stores Plc	✓	✓		×	
Halifax Plc	✓*	✓			?
Hanson Plc	✓	✓		×	
Hilton Group Plc	✓	✓			?
HSBC Holdings Plc	✓	✓		×	
Imperial Chemical Industries	✓	✓			?
Invensys Plc	✓	✓		×	
Kingfisher Plc	✓	✓		×	
Legal & General Group Plc	✓	✓		×	
Lloyds TSB Group Plc	✓	✓			?
National Westminster Bank	✓	✓			?
P&O Steam Navigation Com.	✓	✓			?
Pilkington Plc	✓	✓			?
Rank Group Plc	✓	✓			?
Reckitt & Colman Plc	✓	✓		×	
Reuters Group Plc	✓	✓			?
Rio Tinto Plc	✓	✓			?
RMC Group Plc	✓	✓			?
Scottish & Newcastle Plc	✓	✓		×	
Shell Transport & Trading	✓*	✓			?
Slough Estates Plc	✓	✓		×	
Smithkline Beecham Plc	✓	✓		×	
Unilever Plc	✓*	✓		×	
Whitbread Plc	✓	✓		×	

Table 4-1 : Searching for a corporate partner

Ultimately, the data-collection requirements of this research were met by this one company - a large UK financial institution (see Chapter 5 - Exposition of the Case Study for more details on the participant company) - which offered access to its middle-level managerial staff. An analytic questionnaire was initially put together on the basis of scales previously developed and used in the literature (see section 4.2.2.7 for more details on the instrument used for the data-collection purposes of the study), later discussed with a team of executives from the company's Human Resource Division, and subsequently pilot tested, first by six academics in the Department of Accounting and Finance of the University of Glasgow[1], and then by a number of 5 middle-level managers in the company's premises. In the process of the pilot testing, apart from some minor points relating to the content of (i.e., the terminology used in) the some of the questions and the overall layout of the questionnaire, the issue of response confidentiality and anonymity was particularly and thoroughly discussed, and the decision was made to de-personalise the questionnaire by leaving out any question (e.g., name, age, gender, etc.) that could be used to identify the participant managers. The view shared both by the researcher and by company's managers taking part in the pilot testing of the questionnaire was that this de-personalisation of the instrument would substantially enhance both the rate and the truthfulness of the responses.

Eventually, the questionnaire was corrected in line with the comments made during the pilot tests and, by the end of August 1999, 290 of these questionnaires, accompanied by a cover letter explaining the objectives of the study, a reply-paid self-addressed envelope, and a letter of support by the company, were distributed through the company's internal mailing system to a sample of middle-level managers throughout the organisation. It should be noted at this point that the sample of the study is not random in the strict statistical sense, as the selected focal group was intentionally designed to consist of middle managers who presented a number of necessary characteristics / requirements for sample selection and participation in the research. Specifically, in order to take part in the study, the managers in the chosen company had to

[1] At the first stage of the pilot testing process in the University of Glasgow, an electronic version of the questionnaire (in an Excel format) was tried out. This questionnaire format presented a number of distinct advantages, associated with the entry and analysis of the data (excel macro-commands were used to consolidate the responses on each variable), as well as with the administration of the questionnaire (the electronic version of the instrument could be sent and received fast and cost-free through the e-mail). Nevertheless, the idea of administering this electronic version of the questionnaire was given up at the end, mainly on the grounds of the potential difficulties that may have been encountered by managers that were not quite familiar with computer information technology (use of spreadsheets, e-mails, etc.), and the adverse impact that this could have on the questionnaire's response rate.

i) come from the middle-level of the organisation's hierarchy, as prescribed by the research question under investigation,

ii) be evaluated and rewarded by the same PMERS, so that cross-manager comparisons with respect to their motivation and subsequent performance could legitimately be made,

iii) come from diverse (functional or product) areas, so that a relatively large and heterogeneous sample of managers exposed to different environments and varying degrees of environmental uncertainty could be secured for intra-sample, sub-group (high- vs. low-uncertainty group) comparisons,

iv) have at least two years working experience in their current managerial position, so that the opinions they would express, both with regards to the company's PMERS and with regards to the level of uncertainty in their working environment, could be deemed valid.

Furthermore, as it was revealed later in the feedback sessions with the company's executives where the study's results were reviewed and discussed, the large majority of the managers in the sample were selected from a pool of managers participating in the company's management development programme, that is, a scheme that provides managers with a history of or / and a potential for high job performance the opportunity for additional training and further development. In this sense, the representativeness of the sample of this study may be seen as somewhat limited, mainly owing to the fact that the given sample apparently comprises, for the most part, of managers that have exhibited in the past (or are expected to exhibit in the future) relatively high task performance.

While, as mentioned earlier, the questionnaire pack included a corporate letter of support encouraging cooperation in the research, the respondents were straightforwardly informed that participation was entirely voluntary. In addition, explicit assurances of anonymity and response confidentiality were provided through the cover letter that accompanied the questionnaire to all managers taking part in the project (see Appendix C). In the end, data for the study was collected from a total of 225 completed questionnaires that were returned - directly from the participant managers to the researcher's forward address in the reply-paid envelopes provided - within approximately 5 weeks from the day of their administration to the company, yielding a fairly adequate, almost 78%, overall response rate.

4.2.2.6 The Research Method : An Analytic Questionnaire Survey

As pointed out previously, the type of questions which are to be answered in a research project (that is, the research's subject matter), as well as the form of information which need to be obtained in order to answer these questions, frequently limit the choice of available methods that can be used in a study. To the extent that the present study focuses on managerial attitudes and perceptions, the choice to use a self-administered questionnaire as the basic data collection instrument appears to be largely justified here. In fact, there is a strong research tradition and a correspondingly large body of empirical literature both in the area of management control and in the field of applied organisational psychology that have utilised questionnaire survey methodologies to examine research issues analogous to the ones considered in this study.

Generally speaking, questionnaire surveys are considered to be not only one of the most commonly used, but also one of the most effective means of ascertaining the prevalence and measuring the occurrence (the frequency) of certain behaviours, attitudes, opinions, preferences, and beliefs in the social field (Rossi, Wright & Anderson, 1983 ; Fink, 1995). In fact, many researchers emphatically express the view that the best way to find out what people do, like and believe is to actually ask them (e.g., Weisberg, Krosnick & Bowen, 1989). Although there may be other ways to find out about a belief or a behaviour, it is often quite difficult to determine the frequency of that belief or behaviour without asking the people involved what they really think, feel, and / or do. Especially in studies such as this one where subgroup differences are of primal interest, that is, studies particularly interested in comparing the attitudes, beliefs and behaviours of different *groups* of people (say, highly motivated middle-level managers vs. lowly motivated middle-level managers), the questionnaire survey - basically due to a number of important advantages that it presents over other research methods (see section 4.3 for a thorough discussion of these advantages) - can be a very useful tool in the scientific investigation of such social phenomena.

All in all, respondents in the participant company provided data for this research by completing a questionnaire that essentially comprised of 5 main sections, (see Appendix D) : The first section offered a brief introduction to the subject matter of the research project and also required the participants to fill in some basic information with regard to their position in the company and the number of years they have occupied that position. In section 2 of the questionnaire respondents were asked to provide information concerning the extrinsic and intrinsic rewards that were

associated with their job in the organisation, whereas section 3 required them to provide specific information with respect to the formal system the company used to measure, evaluate, and reward their job performance, that is, the company's formal PMERS. Finally, in sections 4 and 5 of the questionnaire the participants were asked to make a subjective assessment, first of the level of their own motivation and performance on their job, and second of the level of uncertainty that they perceived to be present in their external and everyday task environment. The instruments used in each section to provide measures for the different variables in the study were consistently based on 7-point scales so that to allow the comparison of the scores of each respondent in each individual variable. In addition, each section of the questionnaire purposively began on a separate page, mainly in order to discourage respondents from comparing their scores across the different sections. At the end of each section, respondents were specifically instructed to move on to the next section.

The following sections present in more detail the way in which the theoretical concepts of this research (i.e., all the dependent, independent and intervening variables identified in section 4.2.2.3) were operationalised and measured within the questionnaire that was employed for its data collection requirements.

4.2.2.7 Variable Operationalisation and Measurement

Typically, the process of operationalisation and measurement refers to the set of rules and tasks we use to link the language of theory (non-observable concepts) to the language of applied research (observable measures) (Rose & Sullivan, 1996). The basic, underlying idea behind any operationalisation / measurement attempt always is, first to create a number of constructs (measurable indicators) which relate to the abstract theoretical concepts of the study, and then to measure these constructs. In that sense, variables can be seen as these 'invented' constructs which serve to bridge the gap between theory and applied research, and must be therefore defined in such a way as to

(a) correspond to the concepts identified in the study's theory and hypotheses

(b) be directly observable and measurable.

The next paragraphs attempt to describe how 'the ladder of abstraction' (de Vaus, 1996) has been descended in this study, that is, how each of the designated variables of this research has been operationalised and further measured within the framework of the questionnaire employed.

Independent Variables : The PMERS-related Perceptions

In expectancy theory research, the measurement of valence and expectancy variables requires obtaining statements from the individual whose behaviour is being studied as to his / her personal beliefs, preferences and estimations. Following this precedent, all the independent variables in the study - that is, all valences and expectancies appearing in the expectancy model of managerial motivation that underlies this research (see Chapter 3 - Theory Development, Concept Formation and Hypotheses Formulation) - were measured through a questionnaire, which was developed mainly on the basis of an instrument utilised in prior behavioural accounting research (Ferris, Dillard & Nethercott, 1980) and pretested in a study by Ross and Ferris (1979). All in all, the questionnaire respondents (i.e. the selected middle-level managers) were required to provide answers to a series of questions that aimed to reveal their very own personal *beliefs* and *attitudes* about the formal PMERS of the company.

Obtaining a list of expected Outcomes-Rewards : In the first place, middle-level managers were asked to identify possible outcomes-rewards (both intrinsic and extrinsic) that they themselves believed to be associated with their job performance. The common practice here is to provide subjects with a pre-selected list of possible outcomes - usually generated on the basis of the researcher's own intuition and knowledge of the area, or otherwise compiled from previous research - and then have the subjects express their perceptions (i.e., their valences and expectancies) about these outcomes. In its most elegant form, however, expectancy theory requires that these expected outcomes are obtained directly from the particular individual whose behaviour is under examination (Hackman & Porter, 1968 ; Mitchell & Biglan, 1971). It is particularly these beliefs which are idiosyncratic to the individual himself / herself that are presumed, within the framework of Expectancy Theory, to strongly influence behaviour. Indeed, in an earlier empirical study, Matsui and Ikeda (1976) found that self-generated outcomes were, not only more effective as a means of obtaining expectancy theory measures, but also more relevant to the subjects examined than standard, pre-selected outcomes. As such, in the second section of the questionnaire, each middle-level manager was initially asked to generate his / her own set of expected outcomes-rewards which he / she associated with his / her job.

Obtaining measurements of Valences (EV, IV) : In the same second section of the questionnaire, middle-level managers had to use a seven-point, verbally anchored response scale and react

evaluatively to the job outcomes (which they themselves had previously identified) as a means of obtaining estimates of valence for each job outcome. The selected scale ranged from 'unimportant' (1) to 'extremely desirable' (7), and the items were the job outcomes themselves. In this sense, the response of each subject was taken to indicate the perceived value (valence) that he / she placed on each of the outcomes. Eventually, the total **EV-** and **IV**-scores (that is, total **Extrinsic** and **Intrinsic Valence** scores) for each middle-level manager were calculated as averages, first by summing together all of the manager's individual valence scores for the extrinsic (intrinsic) job outcomes that he / she had identified, and then by dividing this sum by the number of extrinsic (intrinsic) outcomes identified to calculate the manager's average extrinsic (intrinsic) valence score.

It should be noted here that there is some disagreement in the literature about how valences ought to be conceptualised, operationalised, and measured. In stating the basic E-V theory propositions, Vroom (1964) conceptually defined as valence of an outcome the anticipated affective orientation associated with that outcome, or, more simply put, the satisfaction (positive valence), indifference (no valence), or dissatisfaction (negative valence) felt from the anticipation of obtaining that outcome. Within the Porter and Lawler (1967 ; 1968) expectancy model, the valence (or perceived value) of an outcome conceptually refers to the attractiveness of that outcome to the individual. An outcome is positively valent when a person prefers attaining it to not attaining it ; it has a valence of zero when a person is indifferent to attaining it or not ; and, the outcome has a negative valence when a person prefers not attaining it to attaining it. In the relevant empirical literature, valence is found to be measured in various modes, most usually in 'important-unimportant' scales (see, for instance, Lawler, 1968 or Wanous, 1972), sometimes in 'attractive-unattractive' or 'desirable-undesirable' ones (e.g., Lawler & Suttle, 1973 or Turney, 1974), while occasionally some combination of the two scales is used (see, for example, Mitchel & Nebeker, 1973). Although in theory the valence measures should ideally range from positive to negative values - reflecting the possibility that some outcomes may have aversive qualities and therefore negative value for the individual -, traditionally, the great majority of the studies have used (5-, 7-, or 9-point) scales with only positive anchors (Mitchell, 1974 ; Van Eerde & Thierry, 1996). Several authors have attempted to compare the different valence operationalisations empirically (Schwab et al., 1979 ; Ilgen et al., 1981 ; Pecotich & Churchill, 1981 ; Tubbs et al., 1991). However, the results of these studies show that the differences in the operationalisations do not always cause

consistent effects. In the absence of any substantial empirical evidence that supports any particular mode of operationalising the valence variable then, and given the focus of the study on positively valued (PMERS-related) rewards, the employment of the all-positive, 7-point, 'unimportant-extremely desirable' scale that was used here is judged as - at least - acceptable, and is consistent with Ferris, Dillard and Nethercott (1980).

Obtaining measurements of Expectancies (E→P), (P→EP), (EP→ER) : The third section of the questionnaire was constructed to allow middle-level managers to reveal their subjective beliefs (expectancies) about the formal Performance Measurement Evaluation and Reward System (PMERS) of the company in which they operated. Subjects were presented this time with another scale, on which they were to indicate their personal judgements regarding three critical PMERS-characteristics (i.e., i) the attainability of performance standards, ii) the accuracy of performance measures, and iii) the dependency of organisational rewards), all three allegedly related to the motivational effectiveness of the PMERS. Essentially, scores for the three relevant expectancy variables - as these are identified in the model of managerial motivation that substantiates this study (see Chapter 3 - Theory Development, Concept Formation and Hypotheses Formulation) - were obtained by having each respondent rate on a seven-point, verbally anchored response scale, ranging from 'never' (1) to 'almost always' (7), how often he / she felt that

- putting 'a great deal' of effort into his / her job actually led to the attainment of the performance standards as these were defined within the company's PMERS
  (E→P) (Perceived Attainability of Performance Standards)
- his / her actual performance on his / her job was reflected accurately and equitably by the performance measures employed in the company's PMERS
  (P→EP) (Perceived Accuracy of Performance Measures)
- the organisational rewards that he / she received actually depended on his / her evaluated performance as this was assessed by the company's PMERS
  (EP→ER) (Perceived Dependency of Organisational Rewards).

With the particular needs of the present study in mind, and following Mitchell's (1974) recommendations of how this term should be operationalised, each of the above expectancy variables is understood as a perceived probability - that is, as the subjective estimate (i.e., the likelihood) of how often one event A leads to another event B - and a conscious attempt is made

to measure it as such. Conceptualising and further measuring the expectancy variables of the present study in terms of a perceived probability of one phenomenon leading to another - rather than as the perceived cause and effect relationship between two phenomena, which is the alternative in the psychological literature (Van Eerde & Thierry, 1996) - seems to be more appropriate for the type of expectancies that we are interested in here. In addition, this operationalisation seems to be closer to the conceptual definition of expectancies as this is provided by Vroom (1964) and Porter and Lawler (1967 ; 1968), who both defined expectancy as the individual's perceived probability (or subjective expectance) concerning the likelihood that an action or effort will lead to an outcome ; it is also consistent with a number of empirical studies in the field of expectancy theory (e.g., Sheard, 1970 ; Lawler & Suttle, 1973 ; Mitchell & Nebeker, 1973).

Dependent Variables

Obtaining measurements of Managerial Motivation : Consistent with the mainstream practice in expectancy theory, managerial motivation is regarded throughout this research as being most directly reflected in the manager's effort, that is, how hard he / she is trying to perform his / her tasks. In general, effort refers to the amount of energy the individual expends in a given situation, and is typically seen in expectancy theory literature as the variable that most closely corresponds to the motivational component that is presumed to affect performance (Lawler & Porter, 1967). In this theoretical vein, and by taking into serious consideration Porter and Lawler's position that "... what is commonly called 'motivation' should be highly related to measures of effort" (1968, pp.21-22), managerial motivation was measured within this study as the amount of effort middle-level managers put into their jobs.

Effort itself can be potentially measured in a number of different ways. For certain, limited types of tasks, especially in laboratory-type settings, objective physical measurements can be obtained. In typical managerial jobs, however, where such measurements are of limited relevance, the use of more subjective means of measuring effort, such as self-reports or reports of others, are highly recommended (Lawler & Porter, 1967). In effect, scores for the managerial motivation (effort) variable were obtained here by basically having the middle-level managers themselves rate the amount of effort - that is, the level of energy or, alternatively, the amount of motivational force, in expectancy-theory terms - that they expended on their job (self-reports). More specifically,

the fourth section of the questionnaire - following Porter and Lawler (1968) - utilised a self-reported measure of managerial motivation that required each respondent (that is, each selected middle-level manager) to rate on a seven-point, verbally anchored response scale of 'low' (1) to 'high' (2), the amount of effort he / she put into his / her job in relation to others with similar management duties in the organisation. Clearly, the measure of motivation employed in the present study is not a 'hard' measure of the energy the middle-level manager directs toward the various aspects of his / her job. Rather, it is a self-reported *perception* of his / her effort and motivation. And although this approach of operationalising and measuring the motivation variable is common and well established in the field of applied organisational psychology, it does raise some questions, both about the construct validity of the particular measure, and about the overall generalisability of the obtained findings. Initially, the intention was to obtain also a second measure of each middle-level manager's level of motivation by having some other qualified observer (such as the middle-level manager's immediate supervisor) rate in a similar fashion the amount of effort that the middle-level manager expended on his / her tasks, but unfortunately no such access was granted by the participant company.

It has to be noted at this point that the operationalisation and measurement of the work motivation variable has always been a bone of contention within the expectancy theory literature. In his seminal work on the theoretical formulation of expectancy theory as applied to organisational work behaviour, Vroom does not provide any particular guidelines about how to operationalise and measure the motivation variable. He is content to simply point out that "...the only concept in the [expectancy] model that has been directly linked with potentially observable events is the concept of force [where] behaviour on the part of a person is assumed to be the result of a field of forces [expectancies and valences] each of which has direction and magnitude" (1964, p. 20). Force, however, is just a metaphor. In the literature, motivation is mostly operationalised in terms of 'effort', but a number of other operational definitions are variously employed ; the 'intention', 'preference' or 'choice' to engage or not to engage in some form of voluntary behaviour are only some of the proposed indicators of motivational force (Van Eerde & Thierry, 1996).

Even to the extent that effort is accepted as the most valid operationalisation of the motivation variable, a number of related methodological issues still remain unresolved. Effort, particularly cognitive effort, has been notoriously difficult to measure in any empirical research in the past

(Abernethy et al., 1999). Mitchell (1974), for example, discusses at length the difficulties involved in even defining - both on a conceptual and on an operational level - the particular term. Organisational Psychology is yet without any clear specification of the meaning of effort for that matter and, consequently, there is no operationalisation of the variable that possesses even a modicum of construct validity (Campbell & Pritchard, 1979). Aside from the overall conceptual vacuum, or perhaps because of it, self, peer and superior ratings of overall effort - the most frequently used measures of motivation - are each beset by a number of problems. For example, the peer or the supervisor simply may not know how the individual expends his / her energy during his / her day ; and even if the individual were observed constantly, the question "by what indicator does an individual signal a high effort or a low effort input ?" remains difficult to answer.

Self-ratings of effort present their own limitations. Although verbal self-reports seem to be most closely related to the conceptual definition of motivational force as provided by Vroom (Van Eerde & Thierry, 1996), their overall validity as measures of motivation is questionable, since the same individual provides ratings of the independent variables (i.e., expectancies and valences) and the dependent variable (that is, effort). Clearly, there is a high risk here that the relationship between the dependent variable and the independent variables is spuriously inflated by common respondent bias and by shared variance in measurement error when these variables are measured simultaneously (Hom, 1980). Without any intention to underestimate the above methodological limitations associated with the measurement and operationalisation of the main variables within the expectancy model of managerial motivation adopted, this study, after seriously considering the available empirical evidence in the literature, adopted the recommendations of those researchers who have attempted to theoretically, methodologically, and empirically appraise the motivational model itself (e.g., Heneman & Schwab, 1972 ; Miner & Dachler, 1973 ; Mitchell, 1974, 1982 ; Pritchard & Campbell, 1976 ; Campbell & Pritchard, 1979 ; Schwab et al., 1979 ; Wanous et al., 1983 ; Van Eerde & Thierry, 1996).

Obtaining measurements of Managerial Performance : Managers' job performance has traditionally been measured in the field of management control in two ways :

- Objectively, where objective, tangible, generally quantifiable indices are employed to measure managerial performance (e.g. Lawrence & Lorsch, 1967), or

- Subjectively, where performance is measured on the basis of appraisals and / or ratings of the manager by other individuals (such as his / her peers, supervisors or subordinates) or by himself / herself (i.e. self-appraisals and self-ratings) (e.g. Merchant, 1981).

Allegedly, both measurement strategies carry different advantages and disadvantages. An objective performance measure - relative to a subjective one - has the important advantage that it can be easily confirmed by other researchers (Govindarajan, 1984). On the other hand, subjective measures of managerial performance have the potential to take into account less tangible aspects of performance that are quite important to the success of the organisation and, therefore, they can often be found to have greater overall relevance for the organisation's goals than do certain objective measures covering, perhaps, only minor or peripheral aspects of the manager's job (Lawler & Porter, 1967). Moreover, objective measures of managerial performance are more susceptible to reflecting both - and thereby confounding - actual efficiency and successful manipulation of the performance data, hence concealing the real contribution of the manager (Hopwood, 1972). For the purposes of this particular study, measures of a more subjective nature were employed to obtain data of managerial performance, since it was considered that many performance dimensions critical to the middle-level manager's job profile are not amenable to objective, quantitative measurement.

Following the example of a number of empirical studies in the management control area (e.g., Swieringa & Moncur, 1972 ; Milani, 1975 ; Hayes, 1977 ; Kenis, 1979 ; Merchant, 1981 ; Govindarajan, 1984), middle-level managers' performance was measured here on the basis of a self-rating method. Further, as urged by Steers (1975), it was decided to undertake self-ratings of managerial performance along a multiplicity of dimensions rather than on any single performance dimension. As such, in the fourth section of the questionnaire, the previously used, nine-item self-rating measure developed by Mahoney, Jerdee and Carrol (1963 ; 1965) was employed in a seven-point, Likert-scaled form to provide scores for the managerial performance variable. This instrument asked each middle-level manager to use a verbally anchored response scale ranging from 'low' (1) to 'high' (7), and - in a manner consistent with Lawler (1968) - to rate himself in relation to others with similar management duties in the organisation,

- firstly on his performance on each of the eight separate sub-dimensions of managerial activity identified in the scale (planning, investigating, co-ordinating, evaluating, supervising, staffing, negotiating, and representing), and

- secondly on his overall job performance, bearing in mind that different managerial positions are likely to require different mixes of the eight sub-dimensions.

Just as with the measurement of the managerial motivation variable, a second subjective measure of each middle-level manager's level of performance was intended here by having the manager's superior rate how well his / her subordinate performed in his / her job, but again no such access was granted by the participant company.

The existing literature provides substantial support for the use of the Mahoney et al. (1963 ; 1965) performance scale that constitutes the prime measure of managerial performance in this study. Heneman (1974) argues that the eight performance dimensions of the instrument are behaviourally meaningful and applicable to managerial functions across organisations, whereas Govindarajan (1986) provides evidence of the measure's reliability as well as of its construct and criterion-related validity. Additionally, Brownell (1982) points out that the particular self-rating measure has the advantage of overcoming the problem of superiors' tendency "to evaluate on only one cognitive dimension" and, furthermore, has the ability to "clearly capture the multidimensional structure of performance without introducing the problem of excessive dimensionality" (pp. 17-18).

Concern has occasionally been expressed in the literature regarding the use of self-reported measures to assess performance, mainly on the grounds that respondents tend to be too lenient on themselves, thereby resulting in a small range in the scores being observed (Parker et al., 1959 ; Prien & Liske, 1962 ; Mia, 1989). Other researchers however have found support for the proposition that managers' self-ratings of performance are much less biased than researchers typically have given them credit for (Kirchner, 1965 ; Nealy & Owen, 1970 ; Venkatraman & Ramanujam, 1987). For example, Heneman (1974) reports a very high correlation between superior and self-ratings in situations where the subordinate is guaranteed anonymity and understands that the objective of data collection is scientific research and not his personal performance evaluation from the organisation's perspective. On a more theoretical level, Thornton (1980) advocates the self-rating approach to measuring performance, particularly in studies that use a cognitive basis, such as expectancy theory, for measuring motivation. He comments : "Cognitions are an intervening variable between motivational force and objective performance, and should be carefully studied" (p. 269). Otley and Pierce (1996) recognise the

potential problems of response bias and non-response bias (related to the overstatement or understatement of the responses by the respondents, or their failure to respond at all, according to their own personal self-interest) when self-reported measures are employed. They however argue that the likelihood of such bias can be considerably reduced when a guarantee of respondent anonymity and response confidentiality is provided.[2]

To assess the construct validity of the performance measure in the present study (see Appendix E for a full review of the tests run to assess the validity and reliability of the instruments used), the overall effectiveness dimension was regressed on the eight individual performance sub-dimensions, and the eight-dimensional model was found to be significant ($F=20.07$, $p<0.001$), explaining over 43% of the variance in the overall effectiveness dimension (coefficient of determination = 0.4310). This result is consistent with Mahoney et al.'s (1963, 1965) findings and developmental work on the particular measure, and suggests that the overall rating captures a relatively large proportion of the variation in managerial performance as measured by the eight dimensions. Consequently, in line with Brownell (1982, 1985), Brownell and Dunk (1991), and Abernethy and Stoelwinder (1995), the overall effectiveness dimension was used as a single-item overall rating of job performance for the data analytic purposes of the study.

Intervening Variable

Obtaining measurements of Environmental Uncertainty : The vast range of conceptual treatments of environmental uncertainty which can be found in the literature has resulted in a diverse set of measures used in empirical work. The present research focuses on middle-level managers' perceptions of the uncertainty in their internal and external environment rather than on any 'objective' measures of such uncertainty. This approach is consistent with the empirical studies of Dill (1958), Lawrence and Lorsch (1967) and Duncan (1972), as well as with the conceptual arguments of Angyal (1941), Thompson (1967), Weick (1969), Downey and Slocum (1975) and Downey et al. (1975).

[2] An attempt was made in the present research to complement the subjective, self-reported method used in measuring managerial performance with a more objective, 'hard' measure which could provide some validation to the middle-level managers' self-reports of their own performance. The participant company was contacted and the possibility of gaining access to the company's internal performance evaluation personnel reports was enquired, but unfortunately no such data could be made available to the researcher given the company's confidentiality policy on such sensitive performance evaluation information.

Two instruments were employed in this study in order to develop measures of the environmental uncertainty variable. Principally, the uncertainty the manager sees evident in his / her task (internal) environment was measured here through the refined, nine-item, seven-point Likert scale, developed by Withey, Daft and Cooper (1983). This scale is fundamentally based on Perrow's model of task uncertainty (1967 ; 1970) which has directed much of the conceptualisation of task uncertainty in the literature, and is, in essence, a two-dimensional view of internal environmental uncertainty, capturing, in particular, task variability (or number of exceptions) and task analysability. Perrow describes the variability dimension in terms of the frequency with which unexpected and novel events occur in the process of performing one's tasks, whereas the task analysability dimension refers to the extent to which work can be reduced to programmable, mechanical steps (Macintosh, 1981). On these conceptual premises, the fifth section of the questionnaire invited the selected middle-level managers to provide answers (on seven-point scales) to a series of nine questions / statements - five of them related to the variability dimension and four related to the analysability one - about the level of uncertainty they associated with their job. A weighted measure of the task uncertainty variable was then obtained for each respondent by averaging his / her scores on the two dimensions to finally produce a composite task uncertainty score. This measurement approach of averaging or summing (empirically equivalent) the individual scores on the nine items of the Withey, Daft and Cooper (1983) scale in order to obtain a composite score of task uncertainty for each respondent has been employed in the past by a number of researchers in the area of management accounting and control (e.g., Brownell & Hirst, 1986 ; Gresov et al., 1989 ; Lau et al., 1995 ; Lee, 1998). Our preference for the particular measure lies mainly on the following grounds. First, there is general agreement in the literature that this particular instrument performs better than previous measures on tests of convergence, discrimination and internal consistency. Second, Withey et al. (1983) have shown the scale to be reliable and capable of differentiating work units with varying tasks and task uncertainty in a somewhat better way than most of the previous scales. Last but not least, the content of items that comprise this instrument closely reflects Thompson's (1967) definition of perceived task uncertainty, a conceptual definition that has been largely embraced throughout this study.

In the present research, the reliability of the task uncertainty measure was estimated using Cronbach's coefficient *alpha* (Cronbach, 1951) for internal consistency of the scale. This was equal to 0.75 for the nine-item instrument (see Appendix E, Table E-1), which essentially meets

Nunnaly's (1967, 1978, 1981) standards for acceptable inter-item reliability.[3] In addition, the construct validity of the particular measure was assessed by factor analysis (using varimax rotation).[4] The factor analysis yielded two factors with an eigen-value greater than one, together explaining over 63.6% of the observed variability. This result, however, is not surprising, given the two-dimensional nature of the particular construct.

In order to complement the Withey et al. (1983) instrument which provides measurements of the managerial perceptions about the level of uncertainty encountered in the task (internal) environment, measures of the middle-level manager's perceptions about the uncertainty stemming from the external environment in which he / she operates were obtained here on the basis of Gordon's and Narayanan's "perceived environmental uncertainty" scale. Mainly constructed upon Khandwalla's (1972 ; 1977) seminal work, this measure was tested by Gordon and Narayanan (1984) and found to perform well in terms of construct validity and reliability. The particular ten-item, seven-point Likert scale is basically designed to tap respondents' perceptions about the predictability and stability in various aspects of their units' industrial, economic, technological, competitive and customer environments. Hence, in the fifth and last section of the questionnaire each middle-level manager was required to provide answers to an additional series of ten questions/ statements that basically attempted to capture the level of environmental uncertainty that he / she identified with his / her unit operating within all these distinct environments. A simple average of responses to these ten items of the scale was eventually computed and interpreted as an overall index of perceived environmental uncertainty for each respondent.

The environmental uncertainty measure had an estimated internal reliability of 0.64 (Cronbach's *alpha*) for the ten-item scale, which was judged to be satisfactory using Nunnally's (1967, 1978, 1981) criterion cited above. The factor analysis conducted showed that the ten items in the instrument loaded on three factors with an eigen-value greater than one, all three together

[3] According to Nunnally (1967, 1978, 1981), in most cases, measures of modest reliability (0.65 - 0.70) will suffice. Alpha coefficients below 0.50 should be treated with caution. For strictly clinical testing purposes, on the other hand, Rosenthal and Rosnow (1991) argue that coefficients of 0.85 or above may be required.

[4] Factor analysis was employed in this study as a method of testing instrument homogeneity. A number of scholars in the area of research method and methodology (e.g., Carmines & Zeller, 1979 ; Pedhazur & Pedhazur, 1991 ; Oppenheim, 1992 ; Cortina, 1993 ; Nunnally & Bernstein, 1994 ; Brownell, 1995) argue that, apart from coefficient-a that is a useful measure of an instrument's reliability, an estimate of the instrument's homogeneity (that is, the extent to which an instrument measures a single attribute) is also necessary. They further advocate the use of factor-analytic methods as a test of an instrument's unidimensionality, and thereof its homogeneity.

accounting for over 50.5% of the explained variance in the underlying variable (see Appendix E, Table E-4), a result that casts some doubts on the unidimensionality and the homogeneity of the particular scale used.

On the whole, in order to test the hypotheses designated in Section 5.2.2.2, nine variable measures were employed. The empirical literature relating both to expectancy theory and to environmental uncertainty theory was carefully investigated in order to identify those instruments that enjoy general acceptance from researchers in the field. Consequently, all variables in the present study were purposely measured by scales that are based on instruments that have been previously developed and tested in practice, but never applied together in a single study. Table 4-2 summarises the mode of measurement for each of the variables.

Variables	Instrument	Self-Rating	Supervisor Rating	Objective Measure
EV	Ferris et al. (1980)	✓		
IV	Ferris et al. (1980)	✓		
(E→P)	Ferris et al. (1980)	✓		
(P→EP)	Ferris et al. (1980)	✓		
(EP→ER)	Ferris et al. (1980)	✓		
Motivation	Porter & Lawler (1968)	✓	×	
Performance	Mahoney et al. (1965)	✓	×	×
Task Uncertainty	Withey et al. (1983)	✓		
External Uncertainty	Gordon & Narayanan	✓		

Notes : ✓ = carried out as planned
× = intended but not implemented

Table 4-2 : Variables and Measures

4.3 Assessing the Research Method and Methodology Choices

The following paragraphs attempt to address the strengths and the limitations associated both with the overall research design and the particular method employed in this study, in an effort to provide some insights to the logic behind the methodological choices made here.

4.3.1 The Research Design : A Correlational Field Study

The methodological core of this research endeavour is its correlational, cross-sectional design. This research design typically involves picking different samples (sections) of respondents, all the samples together providing, through comparison, evidence of relationships between variables or evidence of causes of change (Krausz & Miller, 1974). Given that the main purpose of this study is to test empirically (that is, to confirm or reject) relationships between variables that derive from the theoretical framework selected, the chosen correlational design appears, at first sight, to serve the purposes of the present research effort.

The choice of design is basically governed by a number of distinct features that characterise the correlational approach. To begin with, the format of the correlation study makes it possible to look at a relatively large number of variables at the same time, and this is a crucial factor as far as this research is concerned. Particularly with studies in field settings such as this one, where a high level of control over subjects is difficult to acquire and the access to and co-operation of the organisation is limited, correlational designs seem especially attractive, mainly due to the simplicity and ease in their administration (Spector, 1981).

However, the correlational, cross-sectional design that has been utilised in this research bears a number of limitations that need to be acknowledged, the major one of which is its inadequacy to prove directly the existence of cause-effect relationships between the variables that it identifies. Based primarily on an observational approach of investigating the phenomenon of interest, the correlational study does not attempt to exert any manipulation or control over the variables being investigated, and, as a result, it can never prove that a causal relationship exists between these variables. As all variables of interest are typically measured simultaneously in such a correlational design, the cross-sectional data that are obtained can go only as far as demonstrating a relationship among the identified variables, the existence of which may theoretically or intuitively suggest causality, but can never *empirically* establish it. In effect, when employing a correlational, cross-sectional design, the kind of evidence we obtain shows that there exists a measure of association between the identified variables, i.e., evidence that two or more variables (say, PMERS-related perceptions and managerial motivation) tend to be related at a fixed point in time. But while an association is a necessary condition of causation, it is not a sufficient condition, so that while the presence of a correlation might suggest the existence of a causal relationship,

it does not provide by itself a basis for inferring causation (Krausz & Miller, 1974). In that sense, the results of the present study cannot realistically conclude anything with respect to the existence of causal relationships between the specified dependent, independent, and intervening variables, or, for that matter, with respect to the direction of causation between these variables.

A similar threat to a study's internal validity when such research designs are employed is related to the difficulty to control the impact of other variables that are not measured but may co-vary with the variables of interest (Abernethy et al., 1999). Unlike an experiment, in cross-sectional survey work, it is not possible to reduce the impact of many of these variables by random assignment to treatment groups (such as high- and low-motivation groups) and then observe the impact of the variables of interest (e.g., PMERS-related perceptions). Therefore, the possibility that other extraneous variables - related, for example, to the profile of the respondents (such as, their age, gender, experience, attitude to work, etc.) - may account for the observed relationship between the identified dependent and independent variables of the study can never be fully ruled out. Although such internal validity threats as those identified in the last two paragraphs are largely unavoidable when using a cross-sectional survey method, they nevertheless need to be acknowledged. In Abernethy et al.'s (1999) view, the only way to minimise these threats is for the researcher to invoke a defensible theoretical framework (in order to counter claims about the existence and direction of causality), and, to the extent possible, to take care in identifying and controlling for other, extraneous variables.

Another serious shortcoming associated with the particular correlational design employed in the present research is instrument reactivity. In studies like this which make use of one single procedure for collecting data (i.e., the self-report questionnaire), common method variance is of particular concern. Indeed, it is an established principle of measurement that instruments react - to a smaller or a larger degree - with the things they measure (Spector, 1981), however, particularly in correlational research designs where a single method of data collection is utilised, subjects' response tendencies and biases when responding to requests for self-reports cannot be directly controlled. Essentially, participants in the present study may have reported attitudes and behaviours in a manner that is more consistent than they are in reality, and this tendency towards consistency may potentially have enhanced the correlation coefficients of the study, threatening,

as such, its internal validity (that is, the degree of confidence that the observed results in the study are actually and solely due to the effect of the factor(s) under investigation).

Hawthorne effects also cannot be excluded from the present correlational, cross-sectional research, for much the same reasons as instrument reactivity. The selected middle-level managers, that constitute the main focal group of the study, are quite aware of their participation in a research project, and the possibility that they distort their responses for a number of reasons including a desire to look good or provide 'good' data for the study cannot be eliminated altogether. Clearly, the latter introduces an additional potential threat to the study's internal validity.

4.3.2 The Research Method : An Analytic Questionnaire Survey

Data for the present study were basically collected by means of a questionnaire survey. This analytic questionnaire was designed to obtain measurements of

- managerial perceptions about the PMERS,
- managerial motivation,
- managerial performance, and
- perceived environmental uncertainty

in the way prescribed in previous sections (see section 4.2.2.6).

The analytic survey was chosen as the most suitable method given the particular characteristics and ends of the present research endeavour. One strong argument for the employment of a survey in the stage of the data collection of this study was the long tradition in expectancy theory research to measure dependent and independent variables by use of questionnaires that are administered to, and answered by either the individual whose behaviour is examined, or by some other, qualified observer. Clearly, such choices, regarding the operationalisation / measurement approaches employed in the field, are naturally dictated by the way concepts such as effort, motivation, and performance are defined within the theoretical context of expectancy theory, as well as by the type of questions that are to be answered by such research projects. It seems that it is particularly the explicitness and clarity of the model of managerial behaviour that underlies this work - common characteristics of most expectancy-theory models utilised in psychological research in the organisational setting - that call for a more structured, quantitative research method. In this sense, a conscious choice was made here to follow the common practice in expectancy theory, employ as

the study's data-collection vehicle a questionnaire that is largely based on well-established and tested measures, and generally conduct this research in a way that will render the obtained results comparable to those obtained in previous studies.

From a methodological point of view, the questionnaire survey carries a number of important advantages. As Gill and Johnson (1991) point out, survey research occupies a variable, intermediate position somewhere between ethnography and experimental research, in the sense that it takes the logic of experimentation out of the laboratory and into the field so as to assess relationships among predetermined variables. The particular research method is most usually characterised by a relatively structured nature, mainly stemming from the 'a priori' delineation of the theory under test, the explicit construction and statement of the hypotheses that are to be tested, and the identification, operationalisation and measurement of carefully selected dependent, independent and extraneous variables. To the extent that highly structured, closed-response, pre-coded questions were largely used in the stage of data collection, providing the responders with a uniform, standardised stimulus, and thereby enabling the collection of data in a form of answers that

(i) were comparable for the majority of the respondents

(ii) lent themselves more readily to quantitative analysis and interpretation,

the chosen survey-based research can be considered to 'score' high in terms of internal validity and reliability. Indeed, there are strong reasons to believe that the chosen research method, mainly due to its structured nature and the statistical control over the variables, has provided this study with a relatively high degree of confidence that the conclusions regarding the identified relationships among the variables are warranted (the element of high internal validity). At the same time, and for much the same reasons, the present study can be safely regarded as consistent over time and easily replicable - partially or totally - for similar research endeavours in the future (the element of high reliability) (Gill & Johnson, 1991).

In addition to the above mentioned strengths, another serious advantage associated with the questionnaire survey is that, being principally an observational, on-the-field method, it allowed this research to take place in a natural setting, increasing, as such, the ecological validity (i.e., the study's degree of confidence that the obtained results and conclusions can be generalised to social contexts and / or environments other than those in which the data has been collected) and,

in consequence, the overall degree of external validity (generalisability) of this study (Krausz & Miller, 1974). Admittedly, the ability to make broad generalisations from a single study to different populations (population validity), settings (ecological validity) and times (temporal validity) is always necessarily limited (Abernethy et al., 1999), particularly so when the study draws data from a single research site as is the case here. Nevertheless, the fact that the respondents to the present study were organisational participants acting within their actual social context certainly adds to this research's external validity.

Lastly, the special care that was specifically given in measuring the study's identified variables with instruments which have been previously developed and extensively tested in practice - therefore enjoying the general acceptance of researchers in the field - provides some confidence about the study's construct validity (that is, the extent to which the constructs of theoretical interest have been successfully operationalised and measured in the research). In effect, no one can ever claim to have developed and employed perfect measures that completely eliminate all possible random error, noise and bias in the process of variable operationalisation and measurement. Particularly in social science research, where we are dealing with abstract theoretical constructs, such an exercise is invariably doomed to imperfect outcomes, as Abernethy et al. (1999) point out. In the end, all that the present work can maintain is that all efforts have been made to utilise prior research practice and experience and measure this study's theoretical constructs as reliably as their conceptual definitions allowed.

All in all, it is worth noting here that the analytic survey was basically chosen as the most appropriate method, primarily on the grounds of the above mentioned research qualities, that is, its strength in internal validity and reliability. It is the researcher's strong contention that these research qualities essentially promote the selected analytic survey design as the single method that can simultaneously combine two critical research features, namely :

- the investigation of the phenomenon of interest (that is, the potential contribution of the formal system of performance measures and related incentive schemes to the positive motivation of middle-level managers) in its natural context
- a relatively high level of control over the identified dependent, independent and intervening variables.

Notwithstanding the fact that the analytic survey - that has been adopted as the primary data collection method in this study - gains in terms of internal validity and reliability for the previously discussed reasons, it has to be mentioned that it does so only to the expense of its ecological validity. Gill and Johnson (1991) point out that traditionally analytic survey research is considered to be relatively low in terms of ecological validity. The use of a fairly stringent, standardised method of gathering data tends to reduce the amount of variability among people participating in the study, results in data that can be readily analysed in a quantitative mode at the second stage of the data analysis, and generally adds to the reliability and internal validity of the research. However, this intended high degree of structure and control in collecting and analysing data in the present study, although conferring strengths, appears to create what is termed within research methodology theory as 'artificiality', that is, a relative lack of naturalism.

In the present study, despite the fact that the first stage of the data collection took place in the natural setting of the phenomenon of interest (i.e., the questionnaires were sent to the selected company and were subsequently completed by middle-level managers operating in that company), the overall ecological validity may have been adversely influenced by the high level of standardisation of the data-collection instrument itself. Essentially, what needs to be recognised here is that there is a high probability that the research participants may have been "...constrained or impelled by the rubric of the self-completion questionnaire" (Gill & Johnson, 1991, p. 123), and may have been led to make statements which, although fitting into the conceptual and theoretical proforma of the research, have given them little or no opportunity to articulate the ways in which they themselves personally conceptualise and understand the matters of interest. Clearly, to the extent that the - almost - exclusive use of close-ended questions may have prevented the respondents from providing important information which is unusual or unexpected, there is a possibility here that the quality (amount, type, detail and accuracy) of the information gained may have suffered. For example, although a considerable amount of data about the motivational impact of specific technical characteristics of the company's formal PMERS were obtained here, little insight was gained on the complex network of relationships and the dynamic interplay between the other (more subtle and informal but equally powerful) administrative, social, and personal mechanisms that are simultaneously competing for influence and control within the

organization (Hopwood, 1974).[5] In effect, making data-collection and data-analysis procedures more standardised and controlled can certainly help results to be more reliable and internally valid. However, at the same time, it can adversely affect the degree to which these results are equally valid, applicable, and generalisable to other, more 'natural', contexts and settings. It is usually for these reasons that survey research is often considered to 'score' low in terms of ecological validity.

To compensate for this artificiality, mainly created by the standardisation of the data-collection instrument, two main measures were taken in the course of this research. First, the pre-coded questions in each section of the questionnaire were complimented with a small number of open-ended questions, with the hope that while the former would provide the factual information, the latter could provide the more attitudinal responses and the replies to the 'why' and 'in what way' probings. These open-ended, narrative-answered questions were expected to offer here a much more direct window into what the actual actors (i.e., the selected middle-level managers) were really thinking about the intricacies of the issue under investigation (that is, managerial motivation through the company's PMERS). Fowler (1995, p.178) remarks on the value of open-ended questions in social survey research by saying that "...when the reasoning behind a conclusion, a behavior, or a preference is of interest, the best way to learn about it is to hear the respondents' own words".

A second effort to increase the study's ecological validity involved an attempt to collect data from a secondary source, data that could enrich and provide triangulation for and authentication of the findings that emerged from the questionnaire survey. The participant company was contacted about the possibility of organising a forum-like event, where the study's quantitative results could be presented and discussed with a larger cross-section of participants and non-participants in the research, and useful feedback on these initial findings could be provided. Thus, by the end of August 2000 (that is, almost one year after the administration of the questionnaire), two closed presentation sessions took place - the first one in the company's headquarters with a selected team of 5 top executives, and the second one in a more 'open' event attended by a focus-group of 15 managers from the company's Human Resource Division -, during which the research's main

[5] Indeed, the possibility that the questionnaire employed for the data-collection requirements of the study may have failed to unveil the existence and role of a more informal, underlying process and culture of evaluating and rewarding managerial performance within the company was specifically mentioned during the feedback sessions with the company's executives, where the study's findings were presented and discussed.

findings and implications were initially introduced and subsequently discussed. In essence, this more qualitative data that emerged from these presentation and feedback session was expected to help confirm (or contradict) the quantitative results obtained through the questionnaire in the study, and thereby help elaborate further on the explanations offered. Abernethy et al. (1999) mention that, particularly in cross-sectional survey research, both data- and method-triangulation has much to offer. In their point of view, the use of multiple methods and / or multiple sources of data in survey-based studies can not only improve the study's overall generalisability, but also enhance the interpretation of the results coming from the survey method itself. On the whole, both the complementation of the pre-coded questions with open-ended questions in the questionnaire, and the attempt to triangulate by collecting additional data of a more qualitative nature have endowed this research with some 'flavour' of naturalism. Nonetheless, the overall ecological validity of the present study is still considered to remain low, mainly as a result of the exceeding number of pre-coded questions included in the data-collection instrument, and the particular emphasis given on the quantitative data that come from these pre-coded questions throughout this study.

From a broader point of view, the usefulness of questionnaires in unveiling the 'true' meaning social actors give to particular phenomena within their immediate social context has been extensively criticised in recent years. A detailed philosophic discussion of the complex topic of social reality will not be attempted here, but it is worth noting that the traditional view that questionnaires can be regarded as adequate means of finding out the truth about some situation or pattern of behaviour is currently in dispute. For example, Abernethy et al. (1999, p.7) argue that when questionnaires are used to capture complex constructs that are capable of taking on multiple "layers / shades of meaning", they typically encounter serious interpretive difficulties, particularly when there is no opportunity for additional follow-up or probing questions. Davies goes a step further when he points to the direction of "...a growing body of evidence which suggests that answers to questions are acts of cognitive construction rather than merely degraded versions of the truth. This evidence derives from the suggestion that the answers people give serve important functions for that person (such as self presentation, preservation of self-esteem, apportioning blame or credit), and that the answers the person offers reveal, first and foremost, something about the way that person thinks, and about his / her motives and intentions, rather than merely providing a blurred window on the truth" (1997, pp. 82-83). The point made here is that social actions are

the actions of conscious people who make choices, have memories, wills, goals, intentions and values which motivate their behaviour, and, to the extent that survey research is likely to neglect the role of these characteristics of human nature as important sources of action, it is - at least - questionable whether it is truly capable of getting at the meaningful aspects of this social action.

All things considered, there is not much doubt that, given the complex nature of the phenomenon of interest of this study - that is, the motivational impact of the formal PMERS on middle-level managers' behaviour -, objections regarding the research choices discussed in the last two sections will arise. Some may criticise the use of structured questionnaires for data collection, with the assertion that the managers' responses to 'closed' questions cannot provide a truly deep understanding of the issue under investigation in all of its behavioural proportions. Others, considering the large number of potential extraneous variables that might exist between, and impinge upon, the relationships hypothesised in this research, may question the appropriateness and ability of purely statistical methods of analysis to unravel such a complex pattern of interaction. This may argue for a more phenomenological methodology that can explore the phenomenon of interest in all of its complexity and holistic quality.

However, given

i) the main purpose of the study, which was to develop and test a contingency argument about the effect of the environmental factor on the motivational effectiveness of the PMERS,
ii) the relatively large number of variables whose relationships this study set out to investigate,
iii) the related time and resources constraints, and
iv) the limited access that the participant company allowed for the research's data-collection requirements,

the analytic questionnaire survey was chosen as the most relevant and cost-effective research method, and as the one that appeared to best fit the specific needs of this work.

That is not to say that the structured questionnaire that has been employed here is regarded as a faultless data-collection instrument. On the contrary, a genuine attempt was made throughout this chapter to document all of its - potential and actual - methodological limitations. In the final analysis, however, it seems safe to conclude that all the previously discussed 'strengths' and

'weaknesses', concerning both the actual method and the overall research design utilised in this work, represent a trade-off between the precision that comes from a high degree of control and the loss of 'real-life' richness. Eventually, such choices depend largely on the purpose of the research, the conclusions which are expected to be drawn from it, and the conditions under which the research is actually carried out (Greene & D'Oliveira, 1982). Overall, although it is quite unlikely that the philosophical stances adopted and the research methods employed in this study will be universally accepted by the whole academic community in the field of management accounting and control, given the constraints of the problem's definition, and the very nature of the theoretical (expectancy) framework assumed, the method and methodology chosen here are seen as highly justified.

4.4 Summary

In this chapter, an attempt was made to address the method and methodology that were adopted in this study. In the early sections of the chapter, the underlying philosophical and methodological roots of the study were thoroughly discussed, and specific details with regard to the particular method employed for the data-collection purposes of this research endeavour were also provided. On the whole, largely due to its multidisciplinary character, the present research had the opportunity to build on a well-established body of existing empirical literature, and therefore made a conscious effort to employ previously developed and well-tested methodology to operationalise and measure its dependent, independent, and intervening variables. From a methodological point of view, that has potentially rendered the study with a relatively high level of construct validity and comparability with a considerable body of relevant literature. In the latter parts of the chapter, the rationale for the choices in method and overall research design was examined, whereas an attempt was also made to refer to the advantages and disadvantages that derive from these choices.

Chapter Five :

Exposition of the Case Study

5.1 Introduction

The objective of this chapter is to provide the reader with background information on the organisation that provided the data for this study. Although some peripheral information on the profile, business environment, corporate strategy, and organisational structure of the selected company are given, the main emphasis still is on the detailed description and analysis of its Performance-Measurement-Evaluation-Reward System (PMERS). Hence, the intention throughout this chapter is to provide a relevant context within which the discussion of the obtained findings can later take place.

5.2 Groundwork for the case study

Without much doubt, one of the largest obstacles to the completion of studies such as this one is the difficulty in securing access to an organisation for the data-collection requirements of the research. Obviously, data availability determines not only the quality but also, eventually, the overall success or failure of any study. As such, achieving the full co-operation of a corporate partner which would be willing to participate in the given research project by providing access to its managerial staff, has been a matter of concern throughout this research endeavour - particularly owing to the fact that the author's connections with the corporate world have always been limited.

With such considerations in mind, in June 1999 preparations started in order to identify an organisation that would be, first, supportive in aiding the researcher to gather the empirical data required, and second, suitable for the kind of research questions that were to be asked and answered in the course of the study. At this initial stage, two main restrictions applied in the search for a corporate participant, namely that :

i) the company should ideally be a large, highly diversified organisation, with a considerable number of organisational units (or a wide variety of functional areas), so as to provide a relatively large and heterogeneous sample of middle-level managers exposed to different environments and varying degrees of environmental uncertainty, and

ii) the company should employ a uniform system of performance measures and incentive schemes to measure, evaluate, and reward the performance of all of its middle-level managers throughout its organisational structure, so that cross-managers comparisons with respect to their motivation and subsequent performance could legitimately be made.

In addition to the above restrictive parameters imposed by the nature of the research problem in hand, the resource and time constraints associated with the study urged the decision to first consider the possibility of finding a corporate partner within the UK. As such, by mid-June 1999, a number of 40 companies, appropriately selected from the Financial Times UK's Top 100 list to meet the aforementioned necessary requirements, were contacted by letter in order to ascertain any interest on their behalf in taking part in the research - of these, one expressed a definite interest. [The method that was followed in order to sample and approach these companies in the study, as well as other similar research method and methodology considerations, are discussed in full detail in Chapter 4 - Research Method and Methodology]. Later in the same month, an appointment with

the Human Resources Director of the interested company (which will henceforth simply be referred to as Bank Sigma) was arranged, in which, in a rather friendly atmosphere, a number of important issues regarding the specifics of the research were discussed, among which were :

- the researcher's motivation for the study,
- the project's characteristics, such as the data-collection methodology, the size and the profile of the intended sample, and the time requirements that the company would have to commit itself to if the decision was made to participate in the study,
- confidentiality and anonymity considerations, both for the company and for the participating managers,
- the potential benefits to the company from taking part in the research.

After the passing of a stressfully long, almost two-weeks' period, on the 21st of July 1999, the company eventually notified the researcher in writing, through its Human Resources Director, that it was willing to take part in the study. In the same letter, two executives from the company's Management Development Division were also designated as the immediate contacts with who the researcher was advised to cooperate for the further organisation and administration of the project. The contribution of these two individuals has been invaluable, not only to the planning and execution of the data-collection process, but also to the composition of this case study, as much of the data on the basis of which the case study was built - particularly with regard to the company's PMERS - was provided by them.

It is worth-mentioning at this point, that an element of good fortune was certainly involved in securing access to the particular organisation, in that, as it will be discussed later, at the time that it was contacted (June 1999) and during the stage of data-collection (August 1999 - September 1999), the particular company was at the late stages of organizing, first, the reshuffling of its organisational and management structure, and second, the introduction of a newly-designed PMERS for the assessment and reward of its managerial staff, both of which were eventually completed by April 2000. Being in a re-organisation phase of revising its management structure and its management control systems, the company in question was clearly interested in obtaining an independent, in-depth diagnosis of the strengths and weaknesses of its then performance measurement and incentive system in use, and therefore willing to allow access to its managerial staff for the data-collection requirements of the study. Indeed, as far as the timing of the contact is concerned, this proved to be ideal for the needs of the present research, providing the researcher with the unique opportunity to gather managerial perceptions about a PMERS

which, although had already been replaced, it had been replaced sufficiently recently to allow the collection of valid attitudinal data about it.

5.3 Review of the case study

5.3.1 Company Profile

Bank Sigma is a leading, publicly held since 1986, UK-based clearing bank, with its headquarters in the northern part of the United Kingdom.[1] Bringing over 300 years of experience to the provision of financial services in the community, the Bank comprises today of four principal subsidiaries, the majority of which are located in the UK, and employs more than 21,000 staff in total within the group. Its branch network presently counts some 350 high street branches and regional offices, predominantly covering the northern UK geographical sector, that offer an extensive and growing range of retail and wholesale banking services to the Bank's professional, business and personal customers. Over the years, the Bank has rightly earned a reputation as a highly respected organisation, and is widely recognised as an innovative and forward thinking player in the financial services sector. Basically owing to its strategic management of technology, it is today one of the largest providers of direct banking services in the UK, and among the world leaders in electronic banking, offering a full range of corporate and personal banking products through intermediaries and direct delivery channels.

The Bank's continuous progress and growth is vividly reflected in its financial performance. In the fiscal year 1999, Bank Sigma had total revenue from interest and investment of £4,132 million, and its net income totalled £557 million - reporting, as compared with the previous year's £3,857m total revenue and £511m net income, a 7.2% and a 9% increase respectively -, that essentially rank the bank amongst the top 8 of the UK banking sector. In other financial highlights for the year to 28th February 1999, operating profit before bad debt provisions (£1,097m, from £954m in 1998), pre-tax profit (£1,012m, from £742m in 1998), post-tax profit (£581m, from £532m in 1998), and retained profit (£376m, from £351m in 1998), all rose to all-time record levels, whereas, at the

[1] Information for this case study have been collected from Bank Sigma's annual accounts, as well as from newspaper and journal articles, which have not been referenced in order to preserve anonymity and confidentiality. Likewise, the quotes and statements extracted from the open questions of the questionnaire and used in this case study have also not been referenced, so that to preserve the anonymity of the participant middle-level managers.

same time, operating expenses increased by 7.8% to £1,056m (1998 - £980m), maintaining the Bank's income growth well above its expense growth. (A 10-year summary of financial data is presented in Appendix F). Although the Bank's modest UK market share (marginally reaching the 2% mark) and its relatively weak position in terms of assets (ranking 73rd within the EU) are unlikely to cause delusions of grandeur in the near future, its current cost : income ratio (historically among the lowest in the UK banking industry, improved from 50.7% in 1998, to 49.1% in 1999) and its persistent growth in assets (total assets rose to £59,796m in 1999, from £54,697m in 1998 - an underlying growth of 9.3%) are both very encouraging signs for the Bank's prospects. Overall, it is fair to say that Bank Sigma is today rightly regarded as a fairly successful competitor within the British banking industry, no matter what performance criteria are used. (Appendix G provides a comparative analysis of Bank Sigma and its 5 main rivals in the UK banking sector).

5.3.2 Business Environment, Corporate Strategy, and Organisational Structure

Admittedly, the business context within which Bank Sigma operates today fits the paradigm of an extremely volatile and highly uncertain world. In fact, the banking industry and its environment have undergone a radical transformation in the last twenty years or so, largely as a result of two factors,

i) the broad movement towards deregulation of the banking and financial services sector world-wide,
ii) the advent of information technology and the effect of technological innovations in the field.

The increasingly diminishing, both in number and in importance, regulatory and technological barriers have mainly brought about a constantly growing in size and sophistication - but clearly highly fragmented in the different target markets - costumer base. At the same time, however, they have resulted in a dramatic increase in the number of competitors and in level and intensity of competition over market shares, prices, and profit margins in the particular industry. All the above, in combination with the inherent difficulty to meaningfully differentiate the offered product, portray an overcrowded, highly competitive, rapidly changing and thus uncertain business environment.

Within this volatile environment that clearly offers many opportunities but also hides many threats, Bank Sigma has constantly tried to find and use shortcuts to implement its basic strategic principle, which is effectively summarised in the words of one of the Bank's executive directors as *"...to steadily grow in a cost-effective manner" (Bank Sigma GM, Branch Banking, June 1995).* In the early years of its development, the Bank basically concentrated on low-cost, high-margin retail financial services, exclusively targeting its local, within-close-proximity, clientele, however, the last 30 years have been marked by a rapid geographical and functional expansion of the Bank's operations, an expansion that has been principally achieved through a series of carefully planned and decisively executed strategies. Overall, the Bank's top management has so far consciously adopted a strategy of careful organic growth rather than a more aggressive, acquisition-centered strategic approach, which has essentially been implemented along the following four major axes :

(i) the successful exploitation of available specialist 'niche' activities, such as the UK oil and gas field financing or the funding of senior debt for management buy-outs in Britain,

(ii) the careful segmentation of its corporate market and identification of its specific costumer base - realising its inability to service all the sectors of the market with the resources available to it, the Bank has selected and concentrated on those customer segments that it could most efficiently and profitably service, aiming mainly at the middle and lower end of the corporate market (i.e., small- and medium-sized businesses),

(iii) the clever market expansion of the Bank's retail operations in the UK, both via a strategically positioned skeleton network of a dozen or so branches and regional offices in the major UK provincial cities, but most importantly via a number of alternative non-branch initiatives that included

- joint exercises with building societies, offering bank accounts linked to building society accounts
- contractual link-ups with major UK retailers based on credit card provision,

that is, business projects that can provide ready, low-cost access to selected customer markets, accelerate the achievements of profitability and pay-back, and simultaneously reduce the start-up costs and risks associated with new commercial ventures,

(iv) the ongoing emphasis on the strategic management of modern technology, and the innovative application of I.T. for the differentiation of its existing financial products and services and the introduction of new ones in its core retail and corporate markets through low cost delivery routes. (Typical examples include the Bank's continuous development of novel electronic

direct banking services, that incorporate leading-edge mainframe computer technology and state-of-the-art telecommunication networks to allow customers to control their bank accounts from a home- or office-based computer terminal ; or the introduction of products such as 'smart', multi-function credit cards with sufficient memory to hold and process security number, balance, credit limit, and previous transaction record information of all the possessor's accounts).

As a result of the consistent and vigorous implementation of the above strategy, Bank Sigma not only achieved sustained organic growth in a relatively short period of time, but also managed to do so in a more cost-effective way than the great majority of its competitors, essentially by avoiding the added costs and risks that are associated with the investment in property assets required for the development of an extensive branch-network infrastructure. Thus, apart from gaining a considerable share of its market in the last few years, the Bank has at the same time succeeded in building up a cost-based competitive advantage, maintaining - as mentioned in the previous section - an overall cost structure well below those of the rest of the UK clearing banks operating in a more traditional, branch-orientated, philosophy.

Today, in the doorstep of the 21st century, Bank Sigma has managed to establish itself as a low-cost, low-risk, high-tech banking business and create a sustainable competitive position in the UK banking industry. On a strategic platform that emphasises building upon established, successfully tested practices - *"...more of the same, but better"*, as recently (November, 2000) proclaimed by its deputy governor -, the Bank continues to grow its business organically with careful, calculated steps :

> *"Our current strategic philosophy is to seek extensions to our business portfolio in national markets where we are already established and to move into new territories only with products where we have extensive experience. We do not want to enter unfamiliar geographic areas with untested products. What we are really aiming at is to first sustain, and, if possible, to go on and enhance our competitive position through efficiency and the exploitation of technology" (Bank Sigma CEO, June 1995).*

In recent years, the Bank's top management team has considered the adoption of a more direct, acquisition-oriented strategy and has, in fact, proceeded with it on a small-scale basis both within

and outwith the UK, however, it remains ambivalent about the desirability of such a strategic choice to date. In a recent interview (April 1997), the Bank's CEO explained :

> *"We can certainly see some sense in it - acquisition would provide more customers more quickly than organic growth. However, we can also see some snags in it. One snag patently is that the market gives us a lot of credit for having a clear-cut strategy which we have implemented quite effectively. That strategy clearly would be somewhat blurred if we suddenly acquired a lot of branches through the length and breadth of the UK".*

Within these environmental and strategic parameters, Bank Sigma was organised until recently - that is, up to the reshuffling of its organisational structure that took place during 1999-2000 - in a free-form multidivisional structure, similar to the one diagrammatically illustrated in the organisational chart of Figure 5-1. More specifically, the Bank was structured around 6 primary operating divisions, each of them run by a managing director in charge. These divisions were regarded as semi-autonomous units, largely self-contained and independent of one another, in the sense that each organisational sub-unit had been delegated the necessary authority to determine its own strategy and to make the necessary decisions with regard to its day-to-day operations, subject to some loose accountability to the centre. On the whole, this organisational structure recognised the divisions as distinct businesses, in effect, as separate subsidiaries, with the Bank's top management maintaining a mere supervisory role. The underlying philosophy behind the decentralised model adopted within Bank Sigma was clearly reflected in the words of the Bank's CEO at the time :

> *"In contrast to most of our competitors who have systematically drawn the decision-making authority into the centre, we have left a lot of that authority with both the branches and the principal subsidiaries. We have intended to keep a very devolved structure. We like, wherever possible, that decisions should be made in the community to which they relate. A good manager is a villager, he has a totality of knowledge, and if you've got some bad news in your business, you're much better to take initiative and go and tell about it, because the likelihood is that he will actually pick it up on the grapevine" (Bank Sigma CEO, June 1995).*

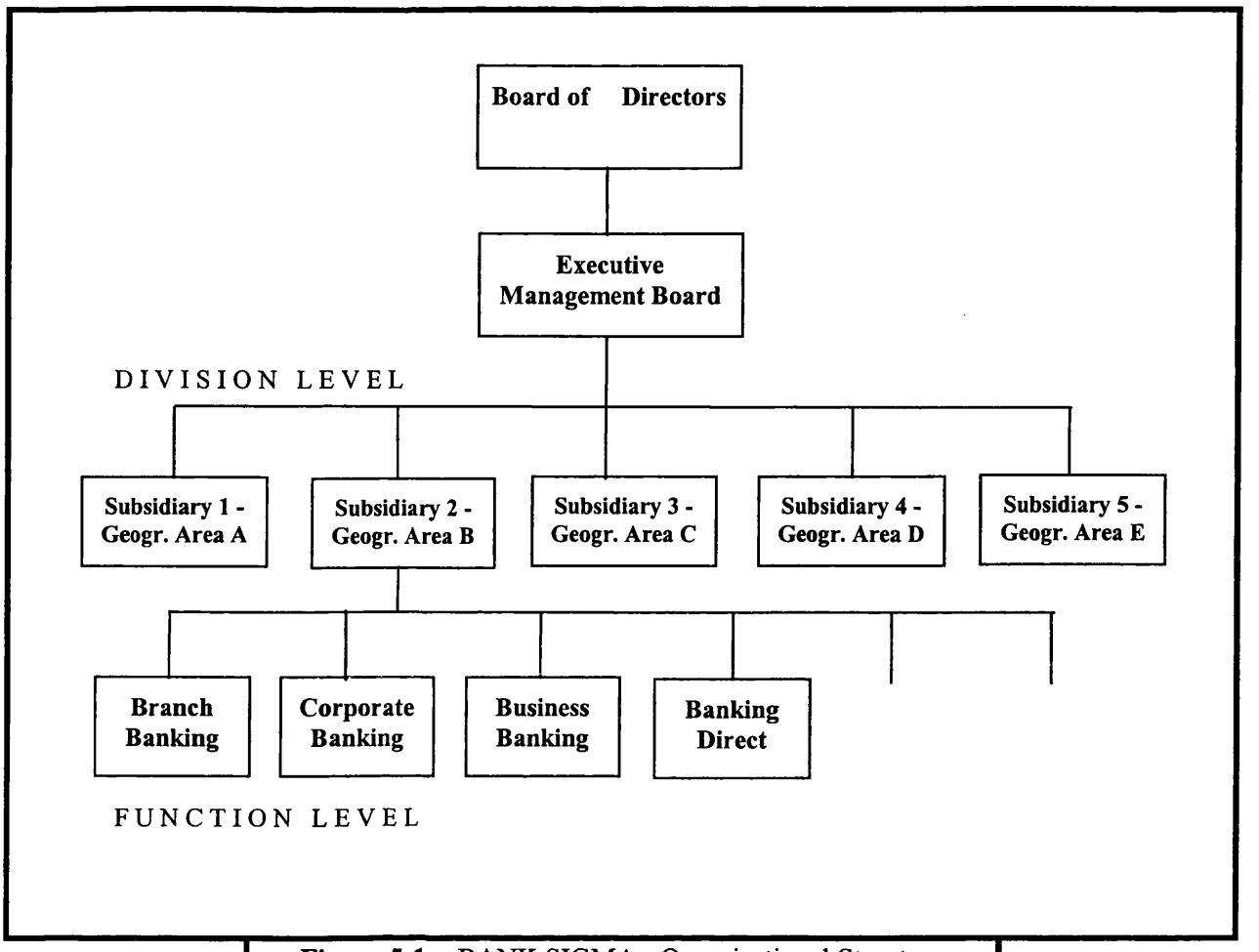


Figure 5-1 : BANK SIGMA - Organisational Structure

The managing directors responsible for the each division's business functions had to report straight to an Executive Management Board. The role of this management board within the given organisational structure and management approach - one of the innovations that was first introduced back in the late 1970s - was, and still is quite distinct from the role of the Bank's traditional Board of Directors, essentially highlighting the top management's intention to separate the strategic from the operational function within Bank Sigma. Primarily consisting of senior professional bankers, this particular body was purposively established to thrust the everyday responsibility for running the organisation onto the bankers, leaving the Board of Directors to wrestle with more strategic issues, although open channels of communication between the two boards have always been maintained *"...so that the Board of Directors has a very good idea of what are the principal issues that the full-time management is occupied with" (Bank Sigma CEO, May 1990).* Essentially, the Executive Management Board provides until today a forum for open expression and discussion of ideas when it meets every two weeks, and is unanimously described by directors and general managers alike as the Bank's "engine of progress", as it is seen to enable

the Bank to make quick and relevant operating decisions, and, at the same time, to alleviate the workload and the scope of responsibility of the Board of Directors. Indicative of the role of the Management Board is the comment of the Bank's CEO back in May 1989 :

> *"When I first took over, I was conscious that banks were very hierarchical organisations with a steep management triangle. I deliberately set out to flatten the triangle because I knew that the ideas that were needed did not lie within myself, but within the people around me".*

Other 'trademark' characteristics of the Bank's organisational philosophy have diachronically been the relative compactness of its top management team, which during the past twenty years has consistently comprised of a small Head-Office staff and a cadre of no more than twelve senior managers, as well as the informal and interpersonal character within which this top management team is said to hold its meetings. This structural arrangement and management orientation have been purposefully intended to facilitate a particular flexible style of strategic management at Bank Sigma, that can usefully enhance the Bank's ability to respond more timely to environmental changes by evading the usual bureaucratic barriers associated with more extended top-management boards.

Recently (January1999), and as part of the drive to improve operating efficiencies, the Bank's top management decided the adoption of a new organisational structure for managing the business activities of Bank Sigma and its subsidiaries. This restructuring integrates all the Bank's existing lines of business together, realigning them under four distinct, customer-facing, operating divisions - the Personal Banking Division, the Business Banking Division, the Corporate Banking Division and the Structured Banking Division - all of which are supported by a central Services Division.

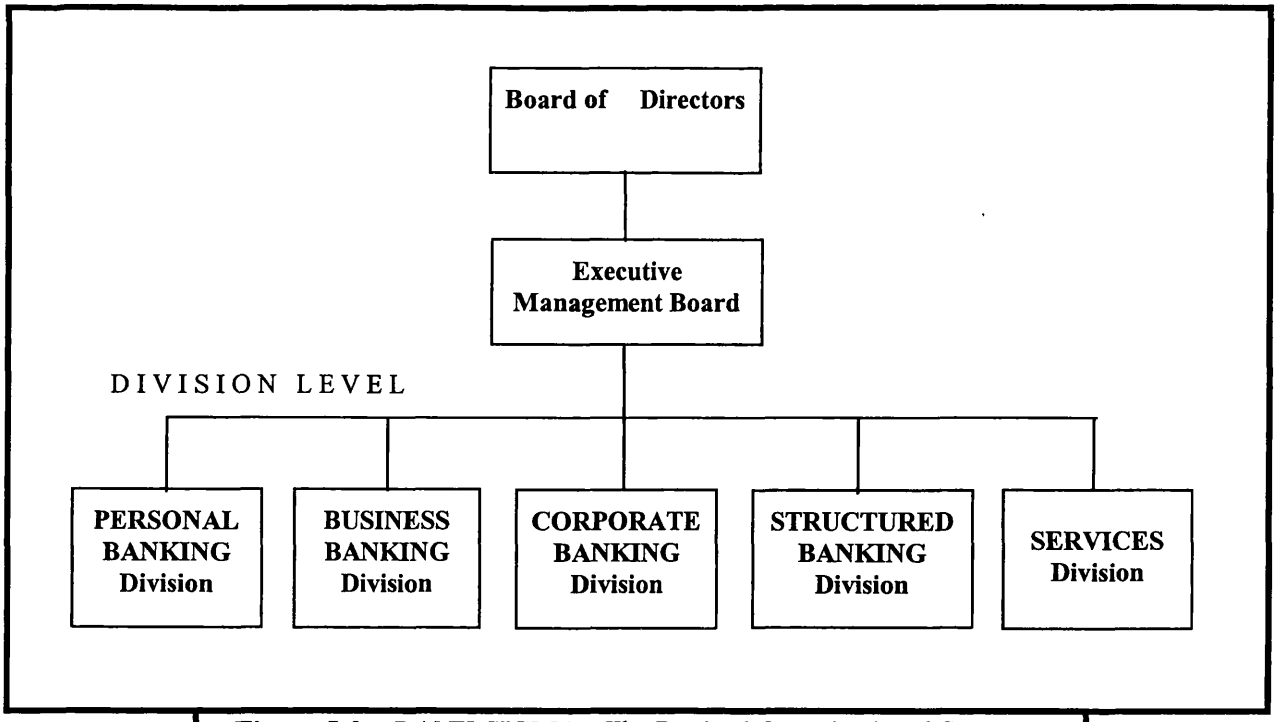


Figure 5-2 : BANK SIGMA - The Revised Organisational Structure

According to the Bank's official announcement, this new, more 'flat' organisational structure, which, for the time being overlays, but before long will supplant the previous structure of subsidiary company management and control, *"...is intended to facilitate growth in the personal, business, corporate and structured markets both by allowing a more focused, market-driven approach to business development and through the provision of products and services tailored specifically to meet customers' demands...and also...to permit the employment of well-tested business practices across Bank Sigma, thereby improving the operational efficiency of the Operating Divisions and the Service Division" (Bank Sigma Press Release, April 1999).* Presumably with an eye for a larger-scale merger and acquisition strategy in the future, this structure, which is organized on the basis of the different type of markets and clients the Bank serves rather than on other geographical or regional criteria, is designed to improve Bank Sigma's efficiency in entering and operating in a multiplicity of diverse markets, by accommodating a more 'across-the-board' management approach - although it is certain to require additional efforts and organizational arrangements with respect to the coordination of the different divisions.

5.3.3 Performance - Measurement - Evaluation - Reward - System (PMERS)

The importance of the individual manager and the critical role of "innovation champions" within a supportive organisation are highlighted within Bank Sigma. The Bank's chief executive officer underlines :

> *"The energy and inventiveness which our management staff, at all layers of the organisation's hierarchy, demonstrates, is essential to every facet of the Bank's business. When I became chief executive, I soon discovered that there is an enormous amount of latent talent in the organisation. I was not sure whether everybody realised it was there, but I was convinced that if those skills and abilities were to be made good use of, we had to 'champion the champions' "*
> *(Bank Sigma CEO, June 1995).*

Aware of the fact that it has to operate in a tight labour-market environment, in which it is becoming increasingly difficult to attract and retain, from a finite supply of talent, the high-performing, key individuals that essentially drive a bank's profits as well as its reputation, the Bank, according to the assertions of its chief personnel manager, *"...has established and maintained a climate of meritocracy, in which performance against agreed standards is the primary basis for reward - whether pay, promotion, or simply praise" (Bank Sigma Chief Personnel Manager, April 1997).*

5.3.3.1 Performance Appraisal System

The formal appraisal process through which the annual performance of the Bank's appointed staff is reviewed and evaluated is essentially an actual performance-against-agreed objectives system. The process is well established - in place since the early 1970s - and simple in principle.

Setting objectives and standards for evaluating the managers' performance :

At the beginning of the appraisal year, each manager meets with their appraiser (in most cases that is their immediate supervisor, either their line manager or their divisional co-ordinator), and through a negotiation process, he / she agrees in writing (see Appraisal and Development Review (ADR) form, part 1, in page 152) one-year-span plans covering the following :

- the targets (objectives) that the manager shall try to achieve over the course of the year (answering the question "what do I have to achieve in the next 12-month period ? ")

- the standards of performance for each of the agreed objectives
  (answering the question "how do I / you know that I have met the objective set ? ")
- the particular actions the manager is required to take in order to achieve these objectives
- the time-scale for the attainment of the agreed objectives.

The identified targets, which are to be measurable, preferably - but not necessarily - in quantified or in time-scale terms, need to be appropriately selected so as *"...to reflect* [the company's] *major corporate strategic objectives"*, according to the Bank's booklet of guidance notes for managerial performance evaluation. In effect, the whole standard-setting process has intended to be really a top-down / bottom-up approach, that involves the line managers identifying the organisation's key business objectives as they apply to their division, and the middle-level managers 'translating' (i.e., narrowing down) these wide company objectives into more specific operational targets, straightforwardly applicable to their own job-roles.

"I think that the most important contribution of the ADR process is its use as a mechanism of setting objectives / targets against which actual results can be later measured" remarks Manager A on the standard-setting function of the Bank's PMERS. *"Sure, such systems are never going to be perfect and are always subject to individual judgement, but overall I am happy with it - it gives you the chance to participate in and thereby establish more realistic targets for the year coming" (Bank Sigma Middle-level Manager, September 1999).*

BANK SIGMA

CONFIDENTIAL 1

APPRAISAL AND DEVELOPMENT REVIEW

Year under review 1998/99

Personal No.	Name	Grade	Date entered grade
Branch/Department			Date appointed

Job Title (Detail main duties performed during the Appraisal Year)
Assistant Manager, Quality and Communication

1. OBJECTIVES FOR YEAR

To be completed by the Appraiser and Given to Job Holder in advance of the Appraisal interview

KEY OBJECTIVES	ACHIEVEMENT AND COMMENTS
PERSONAL GOAL	

Report prepared by	Position	Date
Contributory sources		Appraisal Interview date
Appraiser's signature	Confirmed by (signature)	

Appraiser's Manager's comments

ADREFORM1

Monitoring and evaluation of managerial performance

The monitoring and evaluation of the managers' performance is carried out in a two-stage process throughout the year. Initially, the achievement of the agreed objectives is addressed in an interim performance review at the half-year point where, in a face-to-face meeting between the manager and his / her appraiser, the progress towards the targets is discussed and assessed at a first level. This interim review has been purposefully introduced as an integral part of the overall performance measurement and evaluation process in order to basically ensure a more regular, on-going dialogue about the manager's performance other than that at the salary-review time at year-end. Hence, in this first meeting the manager's progress up to that point is addressed, any particular problem areas thus far are identified and discussed, and the targets set are revisited and, if considered absolutely necessary, even revised.

The evaluation of the manager's annual performance is completed with a second assessment interview at the end of the year. At that stage, in a second meeting between the manager and his / her appraiser, a thorough discussion takes place at which the overall progress made towards meeting the agreed targets is reviewed. At the end of this meeting, the appraiser assesses the manager's effectiveness in his / her work, firstly by evaluating him / her on a number of individual attributes, and secondly by giving him / her an overall performance rating that is supposed to capture and reflect the totality of his / her job performance (see ADR form, part 3, in page 111). For the great majority of the Bank's managerial staff, then, the formal performance evaluation process concludes with a 'tick in the box' assessment of the manager's work effectiveness on a traditional trait-rating measure. It is essentially this overall rating, combined with a similar type self-assessment by the manager himself / herself of his / her own yearly performance (see ADR form, part 2, in page 155), that eventually determine the manager's progression through the company's grading structure, as well as the amount and type of rewards to be awarded to him / her as discussed in the following section.

To sum up, managerial performance within the Bank's measurement package is evaluated and rewarded on the basis of 12 - largely qualitative - indicators / attributes of managerial performance, that have been presumably selected to represent the manager's overall effectiveness in his / her job as this is reflected in the overall performance indicator. The time scale of the performance evaluation normally covers a 12-month period. However, worth mentioning is the

fact that neither the relationship between the individual performance indicators and the aggregate performance measure (i.e., the manner through which the individual indicators are weighted) nor the exact way the rewards are dispensed in relation to the manager's evaluated performance are specified in advance or communicated to the stuff. To the extent that the ADR process is standardised across Bank Sigma, particularly in the context of uncertain, rapidly changing environmental conditions, both the measures weightings and the subsequent reward distribution are likely to be left to the discretion of the middle-level manager's appraiser. Given the anyway qualitative nature of the performance indicators within the ADR, the latter is more than certain to occasionally result in some loss of measurement objectivity and verifiability.

CONFIDENTIAL 3

Personal No. Name Year under review 1997/98

3. ASSESSMENT OF INDIVIDUAL ATTRIBUTES

(see ADR Operating Manual for guidance of the scope of the following individual attributes)

To be completed by the Appraiser and given to Job Holder in advance of the Appraisal interview.

ATTRIBUTE	1	2	3	4	5	6	7	8
Commitment to Customer Care/User Service								
Approach to Marketing/Selling								
Business Imagination and Initiative								
Attitude to Change								
Professional Competence								
Administrative Competence								
Problem Solving								
Decision Taking								
Communicating Verbally								
In Writing								
Leadership								
Relating to People								

APPRAISER'S COMMENTS:

OVERALL PERFORMANCE RATING	1	2	3	4	5	6

4. PERSONAL DEVELOPMENT PLAN

To be completed by the Appraiser during or immediately after the Appraisal interview

4.1 CURRENT JOB	ACTION TO BE TAKEN	TIME SCALE
What actions do you propose to take to improve the Job Holder's performance		
What actions has the Job Holder agreed to take to improve their performance?		
What training or development is recommended, if any, to enhance the Job Holder's performance?		

4.2 FUTURE CAREER		
What training or development is recommended, if any, to further the Job Holder's future career?		

ADRFORM3

CONFIDENTIAL 2

Personal No. Name Year under review 1997/98

2. SELF APPRAISAL

To be completed by the Job Holder and given to the Appraiser in advance of the Appraisal interview

Qualifications ☐ ACIBS ☑ MCIBS ☐ ACIB (England) ☑ Degrees/Equiv: MBA

2.1 To what extent do you consider you have achieved your objectives?

2.2 Are there any aspects of your job you feel are wasteful, inefficient or uneconomic?

2.3 What additional knowledge, skill or experience would enable you to do your present job better?

2.4 What do you see as your next possible job? How would you prefer to see you career developing thereafter?

2.5 Personal factors which may inhibit your desire to move within the U.K. or abroad

2.6 Community involvement, Sports/hobbies

2.7 Self assessment of Individual Attributes
(see ADR Operating Manual for guidance on the scope of the following individual attributes)

ATTRIBUTE	1	2	3	4	5	6	7	8
Commitment to Customer Care/User Service								
Approach to Marketing/Selling								
Business Imagination and Initiative								
Attitude to Change								
Professional Competence								
Administrative Competence								
Problem Solving								
Decision Taking								
Communicating Verbally								
In Writing								
Leadership								
Relating to People								

ADRFORM2

Throughout the years, the Bank's managerial staff have had their own various reactions to the way their performance is evaluated and rewarded within the Bank's formal management control system. One particular area, however, that seems to baffle the majority of the Bank's managers is the accuracy and equity of the performance measurement and evaluation process. For example, Manager B comments with regard to the PMERS's completeness and its ability to clearly distinguish between high- and low-performers :

> *"I believe that the performance measurement system is inherently flawed in that it fails to separate and reward very strong from mediocre performance. In addition, the ADR has always focused on a limited range of job dimensions and never really captured every aspect of performance. In my opinion, the whole evaluation process is poor, with its main focus being on the overall performance rating and really little else. Let alone the fact that the system makes no effort to accommodate the different rules that apply when working in distinctly different environments. Within such a context, it is virtually impossible to measure and reward individual contribution fairly on a cross-divisional basis, and I think this is basically the reason why the current performance appraisal system has little credibility amongst staff" (Bank Sigma Middle-level Manager, September 1999).*

Manager C, on the other hand, is more concerned with the subjective nature of the performance appraisal system, and the inadequate informational basis for performance evaluation :

> *"My personal opinion is that we are a large, highly bureaucratic organisation and not a meritocracy. Overall, I would say that the whole performance evaluation process is very much dependent on the subjective view of the assessor, i.e., the line manager. There is insufficient management information available for effective performance measurement and assessment, and in most cases the evaluations are carried out at a distance, without any factual evidence, by an individual who visits the division no more than 3 times per year. If I had to evaluate the present system, I would say that its main weaknesses are its subjectivity and its inconsistent application from the one year to the other" (Bank Sigma Middle-level Manager, September 1999).*

Manager D goes a step further to offer some recommendations with respect to the design of the PMERS, recommendations that he / she considers instrumental for the improvement of the

system's credibility and motivational impact :

> *"Up until now the degree of subjectivity has been too high in our system. What is required today is a new performance appraisal system which includes objectives that, at the very least, aim to be S.M.A.R.T. - Specific, Measurable, Achievable, Realistic, and Time-based. This will most certainly reduce the level of subjectivity in the evaluation and reward of individual performance, and will increase the confidence in the system" (Bank Sigma Middle-level Manager, September 1999).*

A last noteworthy feature of the Bank's formal appraisal system is its commitment to meet identified development needs that emerge from the performance evaluation process. Both the managers and their appraisers are specifically required to discuss and identify development needs and career aspirations and to record them (see ADR form, part 4, in the next page). Subsequently, and as a matter of the Bank's corporate policy towards the creation of an environment and a culture of continuous improvement, these evaluations are expected to be followed up through communication, training, and internal consultancy by the Bank's Human Resources Division and its Management Development Unit.

With reference to Bank Sigma's dedication to the ongoing training and development of its managerial staff, Manager E observes :

> *"I have the feeling that the great majority of the Bank's managers genuinely appreciate the amount of time, effort, and finance the Bank expends to assist us learn and develop further both at a professional and at a more personal level. The Management Development Programme that is in place, provides the opportunity to increase both the number and level of skills and expertise you have, thereby improving your promotion and career prospects, and helping you 'grow' as an individual at the same time" (Bank Sigma Middle-level Manager, September 1999).*

CONFIDENTIAL 4

Personal No. Name Year under review

5. PROMOTABILITY

To be completed by the Appraiser during or immediately after the interview.

5.1 READINESS FOR PROMOTION

Which one of the following best reflects the Job Holder's current readiness for promotion?

		Indicate the reasons underlying your choice:
Ready now	☐	
Within 1 year	☐	
Within 1-3 years	☐	
After 3 years	☐	Promotable in Current area? ☐ YES ☐ NO If no, give reason
Unlikely in the foreseeable future	☐	

5.2 CAREER PATH

To which of the area(s) of the Bank is the Job Holder best suited?

BRANCH BANKING	DEPARTMENTS
Large Corporate Business	Type of Work:
Corporate/Professional	
Small Business/Personal	
Predominantly Personal	Possible Departments(s):
Farming Area	
New Branch Situation	

Comment on your selection(s) with due consideration being given to the Job Holder's ability to move within the U.K. or abroad

5.3 POTENTIAL

In the light of 5.1 and 5.2 assessments what do you consider could be the Job Holder's next appointment?

5.4 LONGER RANGE POTENTIAL

An indication of the Job Holder's longer range potential should be given.

6. REACTION TO APPRAISAL REVIEW

To be completed by Job Holder after the Appraisal Interview

Signature _____ Date _____

ADRFORM4

5.3.3.2 Rewards Package

Bank Sigma applies a reward scheme to all of its appointed managerial staff on a uniform eligibility basis, subject to the manager having met the sole requirement of having occupied his / her current position for a reasonable amount of time (no less than 6 months). The Bank's incentive package includes a range of rewards, some allocated on the basis of the manager's individual performance, some dispersed on the basis of the Bank's overall performance, others simply deriving from the occupation of the managerial post. More specifically speaking, the Bank's reward package includes :

→ Annual Cash and Stock Bonus Awards : Cash and stock bonus awards are two of the principal ways in which individual job performance is rewarded in the Bank. Both of these performance-related rewards are distributed at year-end, on the basis of the evaluation of the manager's annual performance against his / her agreed and assigned targets. Within Bank Sigma, each division holds its own pot of cash and shares for bonus distribution, with the division manager having being delegated the authority and responsibility to decide upon its allocation among the division's managerial staff. Fundamentally, managers whose overall performance rating (see ADR form, part 3) is at least fully satisfactory - that is, managers who receive a overall rating of 1, 2 or 3 - are expected to receive some amount of annual bonus, which is most usually given out in cash-form up to £3,000, and the rest in company shares.

→ Salary Increase : In its attempt to further reward individual contribution, the Bank has established a pay-rise scheme that is also dependent on the evaluation of the manager's annual performance. The allocated award structure is solely based on the manager's overall performance rating (see ADR form, part 3), and ranges from a 3.5% to a maximum of 5% rise in his / her basic taxable salary. This performance-related salary increase is paid according to the following schedule :

Overall Performance Rating	Salary Increase (%)
3	3.5%
2	4.0%
1	5.0%

Table 5-1 : BANK SIGMA - The Performance Related Pay-Rise Scheme

→ Executive Stock Options Scheme : Just like with the two previous incentive plans, this is a performance-related reward scheme, which however applies only in cases of really outstanding individual performance. In effect, according to this scheme managers who have demonstrated an exceptionally high performance throughout the year (that is, managers whose overall performance rating in part 3 of the ADR form is at the range of 1 to 2) are given the option of an additional 1000 company shares that are provided at a premium price. Essentially, these executive stock options are awarded on the same basis as the annual bonus, i.e., their distribution is closely linked to the manager's overall performance as this is evaluated within the ADR process during the year.

→ Profit Sharing Scheme : To complement its performance-based schemes which ensure that individual contribution is matched by reward, the Bank has developed and implemented an additional reward scheme that emphasises the importance of co-operation and collective effort in the generation of company results. Bank Sigma's profit sharing scheme is based on the achievement of a predetermined level of corporate profit, and applies uniformly to all the Bank's managerial staff. Subject to achieving this corporate profit target in the financial year ended, all appointed managers receive close to the mid-year point a maximum payment of 15% increase on their salary, either in the form of distributed stock, or as a cash-payment, or as a combination of the two.

→ Stock Options : Stock options constitute the Bank's main long-term compensation device, used not only to motivate the performance, but also to improve the retention rate of its managerial staff. On the basis of Bank Sigma's stock options scheme, all managers invariably - regardless of their job performance - are once every year granted the opportunity to purchase company stock at a stated price, at a future date. As such, every September, being eligible through his / her employment contract, each of the Bank's managers is invited to buy shares up to £3,000 (£250 per month) at a premium price, with an option of a 3-, 5-, or 7-years arrangement.

→ Fringe Benefits Package : To ensure a balanced set of organisational rewards, Bank Sigma offers to all its employees who have reached the managerial level a range of fringe benefits that include :

- ◊ private health cover
- ◊ non-contributory pension

- ◊ eligibility for preferential banking (subsidised mortgages, low-interest loans, etc.)
- ◊ company car
- ◊ subsidised holidays.

Some of these fringe benefits are contributory - that is, they are provided at some cost to the manager - while for others, such as the basic pension scheme, the Bank assumes the full cost of the benefit.

To sum up, Bank Sigma's PMERS appears to be fundamentally structured upon a three-stage appraisal and development review process, which commences at the beginning of the year with an agreement between the manager and his / her supervisor upon the objectives for the forthcoming year, continues with an interim review of the manager's progress towards the agreed targets at the half-year point, and concludes at year-end with a comprehensive evaluation of the manager's annual performance by his / her supervisor. Individual pay and career progression, as well as the receipt of the (performance-related) organisational rewards available, is largely based upon this annual appraisal and development review which basically assesses the manager's performance against the agreed work objectives. The Bank's chief personnel manager briefly comments on the role of the PMERS within the organisation :

> *"The performance review system aims to give managers and their supervisors a clear framework for making plans, and for discussing and rewarding the progress towards these plans ; to ensure that this is done in a fair and consistent manner ; and to provide line and personnel managers with useful information about the skills and abilities of the staff" (Bank Sigma Chief Personnel Manager, April 1997).*

However, a number of middle-level managers within the Bank express their reservations about the system's reward equity and subsequent motivational effectiveness. For example, Manager F is seriously concerned with the performance dependency of the reward package within the PMERS, as well as with the meaningfulness of some of the rewards offered :

> *"Indeed, there is a performance evaluation and reward infrastructure in the Bank which appears to be objective, but as far as I am concerned, individual performance is very loosely linked to reward. In my opinion, the distribution of rewards within the system is not equitable, in that both poor and top performers enjoy the same amount of profit share - which is, by far, the biggest element of reward - and the*

bonus element is, after tax, nice but not meaningful in any real sense. Even in cases where good performance is recognised by getting 'a good overall mark', this is very rarely translated into salary level - the real difference in pay award for an 'average' and 'above average' performance is invariably less than 1%. In general, I feel that a large number of the company's major benefits are made available to all staff outwith the PMERS, and, as a result, the system does not contain any significant element of reward for individual contribution. On top of that, the fact that the Bank's fringe benefits package does not allow any room for flexibility and personal choice is certainly a minus - not all the benefits included in the package are relevant to all staff" (Bank Sigma Middle-level Manager, September 1999).

5.3.3.3 Looking at the future : The introduction of a new PMERS

Very recently, perhaps as a response to the managers' criticisms, but more likely following as a natural consequence of the reshuffling in its organisational structure (see Figure 5-2 - The Revised Organisational Structure), Bank Sigma introduced a new system for the measurement and evaluation of managerial performance. According to the Bank's declarations, the new system aims to :

* provide a direct link between remuneration, managers' skills and work behaviours, and corporate objectives
* encourage staff development and flexibility, while improving motivation and performance
* provide a fair reward system that can support a more meritocratic environment
* rationalise the Bank's grading structure by redefining the grading levels, and by clearly specifying the required conditions for progression through the company's hierarchy
* offer the Bank's managerial staff new career paths in a flatter organisational structure.

At the development stage of this new performance appraisal system, the Bank involved most of its UK managerial staff (middle-level, line, division, and senior managers, altogether around 1000 people) in an attempt to first identify and then validate all the main managerial tasks that are undertaken on a daily basis by its individual managers bank-wide. Based on this extensive list of tasks, a range of role profiles were put together, detailing a number and a level of necessary personal and technical (task-based) competencies for every single managerial position within the

company. It is now on the basis of these role profiles, and on the competencies-dimensions of expected managerial performance that apply to each role, that the Bank's managers will be evaluated and rewarded in the future.

"The focus has shifted to how managers apply their skills and knowledge, and how these fit both with the 'micro' operative business processes and with the wider 'macro' corporate strategies" says the Bank's chief personnel manager, among the key members of the project team that designed and implemented the new system. *"We believe that the new appraisal framework will provide a more relevant and accurate basis for individual performance assessment and reward, by evaluating and paying staff for the way they perform their jobs, rather than just the outcome" (Bank Sigma Chief Personnel Manager, October 1999).*

Although not yet quite completed, a revised remuneration package for the Bank's appointed staff, that will sit alongside the new performance measurement and evaluation system, is currently under development. With a growth strategy in mind, and its new organisational structure already in place, Bank Sigma's intention clearly is to establish a PMERS that can be easily implemented 'across the board', so as to accommodate these strategy and structure choices.

5.4 Summary

In this chapter, a descriptive case study of the organisation which provided data for this research was presented. Although the intention never was to produce a full account of the company's dealings, some information concerning the business environment in which the company operates, as well as details about its corporate strategy and organisational structure were provided in the early sections of the case study, so that the reader can recreate a relevant context within which the findings of the study can be later presented and interpreted. However, with the main focus of the research always on systems of management control and motivation, the latter parts of this case study were fully concentrated on the description of the mechanics of the company's PMERS, and, to some extent, on the reactions of the members of the organisation to it.

Chapter Six :

Data Analysis & Results

6.1 Introduction

This chapter contains the statistical analysis (descriptive and inferential) of the data obtained with the questionnaire survey. In its early sections, a preliminary descriptive analysis of the data is presented, providing in the first place univariate statistics on the sample of the 225 middle-level managers surveyed, and subsequently attempting a diagnostic analysis of the company's PMERS on the basis of these summary statistics. The latter sections of the chapter are primarily concerned with the statistical testing of the hypotheses developed in Chapter 3 of this dissertation, drawing particular attention to the process and underlying logic of the analyses conducted. Overall, the focus in this chapter is equally on the description of the basic approach to data analysis adopted in the study, and on the presentation of the results obtained from this data analysis ; the interpretation of the findings and their implications constitute then the subject matter of Chapter 7.

6.2 Descriptive Analysis

6.2.1 Sample Characteristics

The 225 managers in the sample have held their current managerial positions for an average of 3.03 years.[1] Taken as an indication of the respondents having a reasonably high level of experience in their job, this summary statistic provides some confidence about the validity of the data collected in the study. To the extent that the majority of the collected data refers to managers' perceptions (either about the company's PMERS, the level of uncertainty in their environment, or their motivation and performance on their job), it has been considered essential right from the start of this research - and was therefore identified as one of the major sampling criteria in the data collection process - that the respondents would be in their position long enough to be able to express well-informed opinions about the above variables. Figure 6-1 below presents the frequency distribution of the 'position experience' variable.

Figure 6-1 : Frequency distribution of the 'Position Experience' variable

[1] A more representative average for the 'position experience' variable was calculated after excluding the 'outliers', that is, the extreme cases in the sample. After leaving out the managers with more than 15 years or less than 6 months in their present job, the mean experience is only marginally below the 2.5 years point (2.48), thereby providing further support to our argument about a relatively high level of position experience of the subjects surveyed. In addition, comparison-of-means tests were run for differences between the group of the less experienced managers (position experience < 1 year) and the rest of the sample in order to assess the potential moderating effect of inexperience on each of variables identified in the study (see Appendix H). These tests reveal no significant mean differences in any of the designated variables between the two groups, and therefore the total sample of the 225 managers is subsequently used the data analytic purposes of the study.

The division of the total sample over product / functional areas and hierarchical roles within the organisation is presented below. Table 6-1 contains data both about the absolute number and about the proportion of respondents that reported to work in the specific area within the particular managerial role. On the whole, this overview of the sample provides an indication that the sampling criteria employed in the study - that basically aimed at securing a relatively large, and at the same time, heterogeneous cross-section of experienced middle-level managers, exposed to different environments and varying degrees of environmental uncertainty - were effective.[2]

		Position in the Organisational Hierarchy								Total	
		Directors		Senior Managers		Associate Directors		Managers			
		Absolute Number	% of Total Sample	Absolute Number	% of Total Sample	Absolute Number	% of Total Sample	Absolute Number	% of Total Sample	Absolute Number	% of Total Sample
Product / Functional Area	Corporate Banking	18	8,0%			4	1,8%			22	9,8%
	Business Banking	11	4,9%	1	,4%	6	2,7%			18	8,0%
	Structured Banking	8	3,6%			2	,9%			10	4,4%
	Direct Banking	3	1,3%					6	2,7%	9	4,0%
	Personal Banking	4	1,8%	2	,9%			1	,4%	7	3,1%
	Support Services	4	1,8%	7	3,1%	3	1,3%	4	1,8%	18	8,0%
	Finance & Accounting	7	3,1%	2	,9%	4	1,8%	4	1,8%	17	7,6%
	Customer Service & Market Development	5	2,2%			3	1,3%	5	2,2%	13	5,8%
	Human Resources	4	1,8%			4	1,8%			8	3,6%
	Other	30	13,3%	20	8,9%	30	13,3%	23	10,2%	103	45,8%
	Total	94	41,8%	32	14,2%	56	24,9%	43	19,1%	225	100,0%

Table 6-1 : Segmentation of Sample over Product / Functional Areas & Hierarchical Roles

As expected given the sample of the present study, the level of (self-reported) motivation and performance within the total sample of 225 managers surveyed appear to be rather high (mean motivation = 5.97 and mean performance = 5.62, in a scale of 1-7). Frequency distributions of the 'motivation' and 'performance' variables are presented below, in the histograms exhibited in Figures 6-2 and 6-3 respectively.

[2] The large number of directors (n=94) in the total number of 225 middle-level managers surveyed raised some doubts about the representativeness of and potential bias in the given sample. Nevertheless, both the parametric and the non-parametric tests that were run to reveal any such hidden biases in the data collected (see Appendix I) indicate that there are no significant differences in any of the variables in the study between the group of the directors and the rest of the sample.

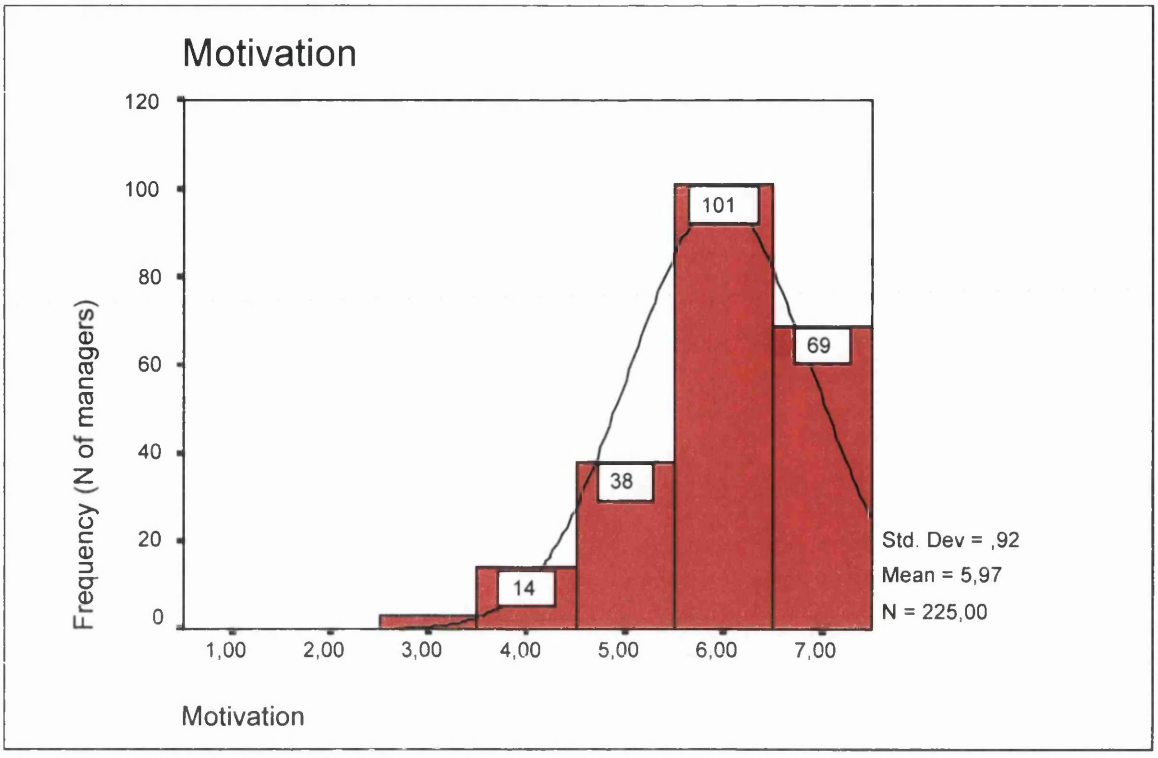


Figure 6-2 : Frequency distribution of the 'Motivation' variable

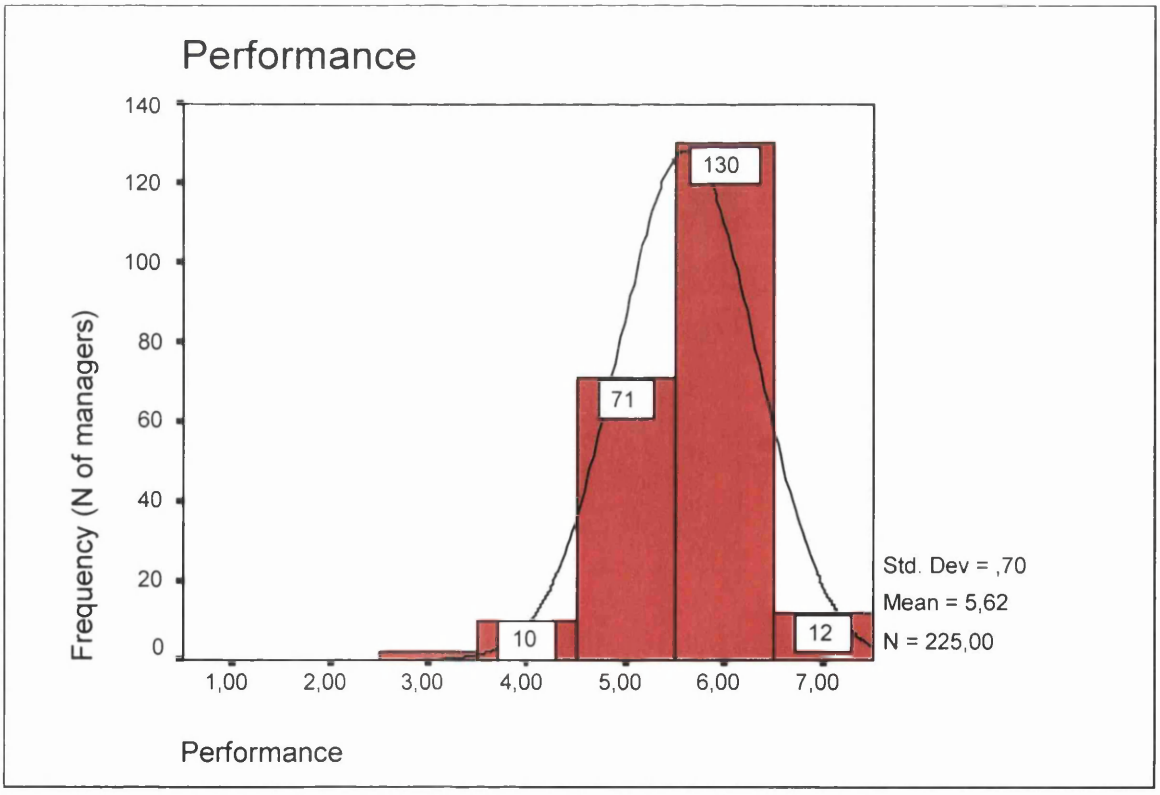


Figure 6-3 : Frequency distribution of the 'Performance' variable

6.2.2 PMERS Diagnostic Analysis

The summary statistics obtained on the expectancy variables of the study can be used to carry out a first-level diagnosis of the strengths and weaknesses of the selected company's PMERS in motivational terms. According to the expectancy model of motivation that has been applied in this research, for any PMERS to be able to extrinsically stimulate managerial motivation and performance, it must be perceived by those it is supposed to motivate - that is, the managers themselves - as being reasonably adequate in all three stages of its sequential process, i.e. equally adequate in

i) setting standards of performance that are seen as attainable **(E→P)**

ii) evaluating the attainment of these standards through performance measures that are perceived as accurate and equitable **(P→EP)**

iii) administering rewards that are deemed desirable **(EV)**, and dependent on this performance evaluation **(EP→ER)**.

The relevant descriptive statistics in the total sample of 225 revealed that the performance standards which are set within the company's PMERS are perceived, on average, as sufficiently attainable (mean perceived attainability of standards **(E→ P)** = 5.22, in a scale of 1-7) by the company's managerial staff. On the other hand, it seems that the performance measures employed by the company in order to evaluate and further reward its managers' performance are seen by the managers themselves as less capable of accurately capturing and reflecting actual managerial performance (mean perceived accuracy of measures **(P→ EP)** = 4.14). As far as the rewards offered by the organisation are concerned, these appear to be perceived, on average, as fairly highly desirable (mean perceived value of total reward package **(EV)** = 5.57), however they are regarded as being less strongly related to the managers' PMERS-evaluated performance (mean perceived dependency of rewards **(EP→ER)** = 4.19).[3] Figures 6-4, 6-5, 6-6 and 6-7 below present the frequency distributions of these expectancy variables.

[3] A detailed descriptive analysis of the company's reward package, providing reward-specific information about the most frequently mentioned, the most valuable, and the most performance-dependent rewards as these are perceived by the managers in the sample, is presented in Appendix J.

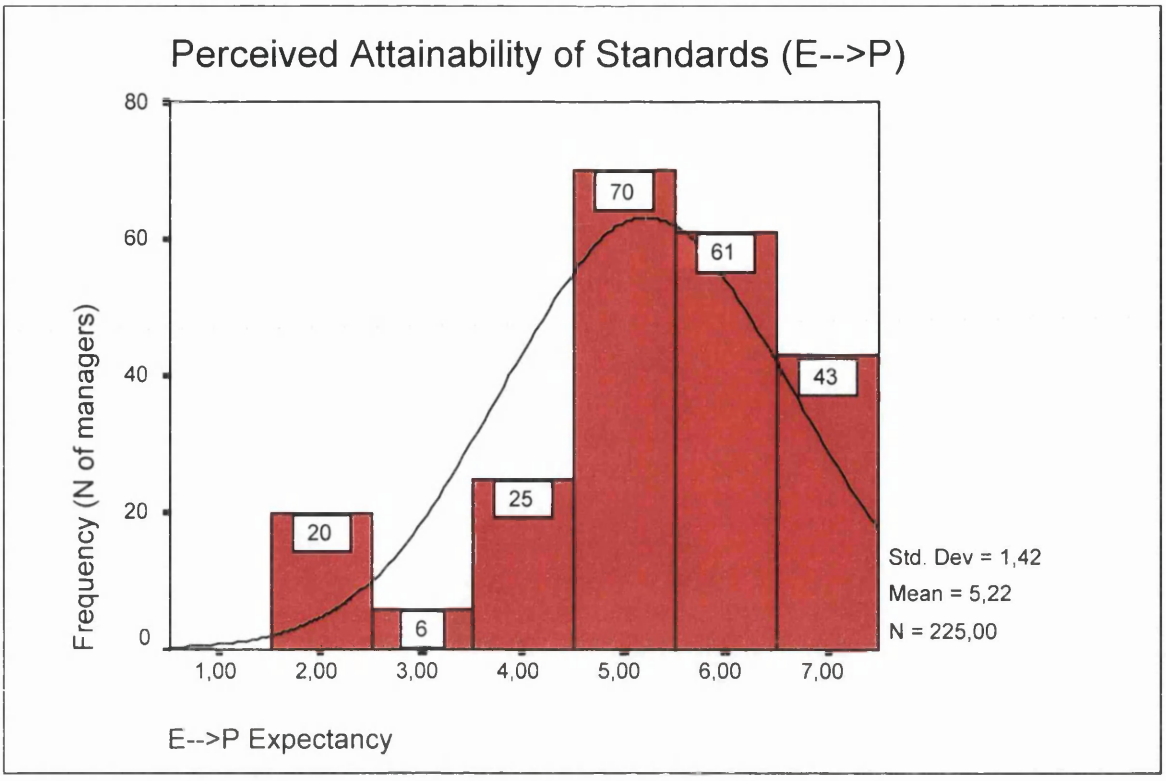


Figure 6-4 : Frequency distribution of the 'E P Expectancy' variable

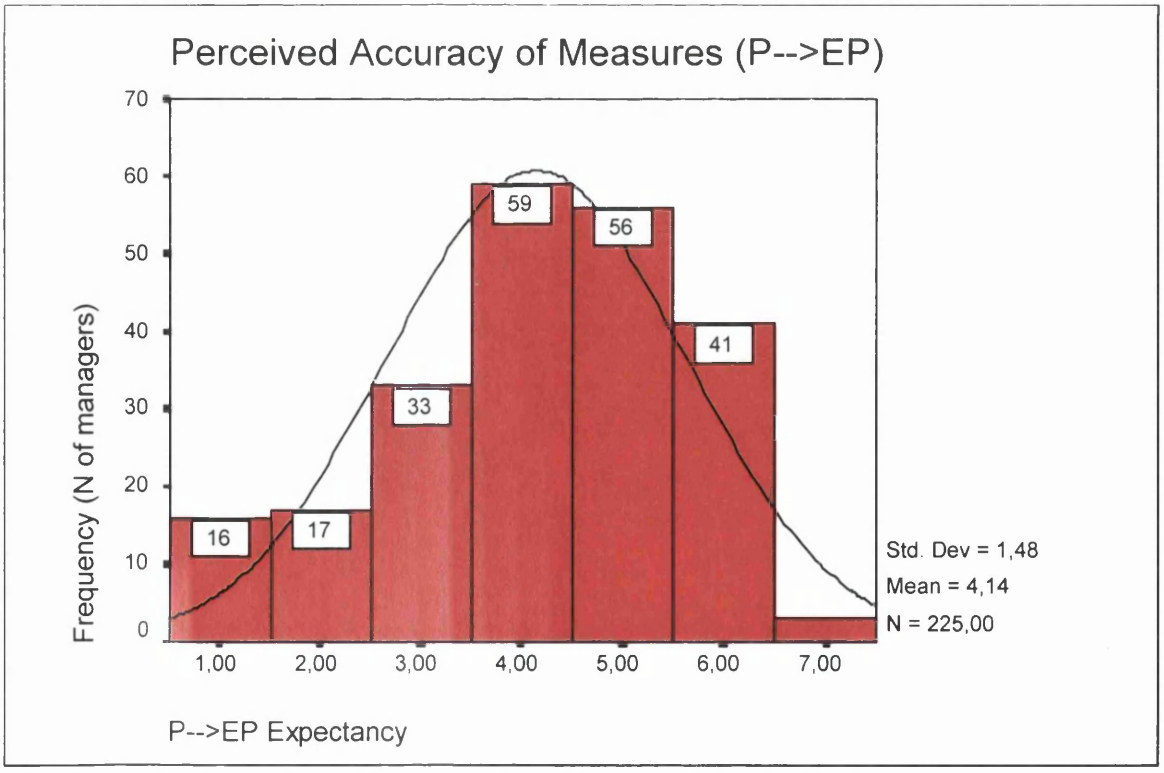


Figure 6-5 : Frequency distribution of the 'P EP Expectancy' variable

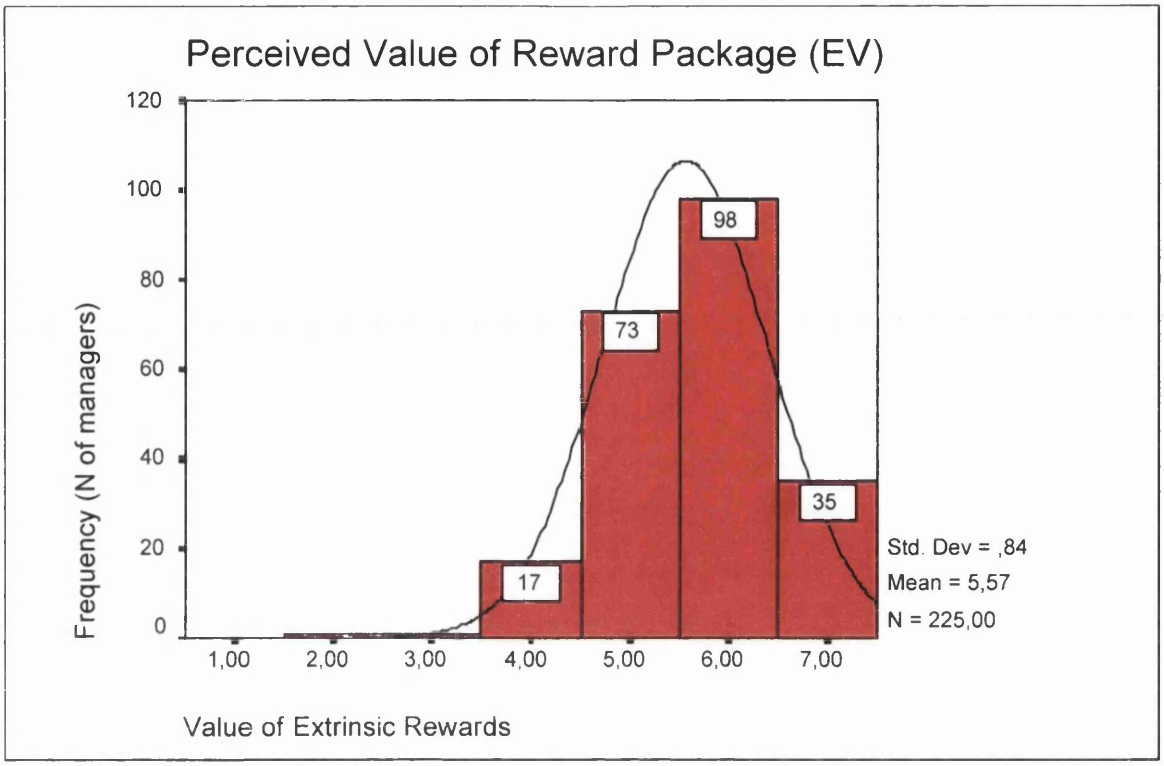


Figure 6-6 : Frequency distribution of the 'Value of Extrinsic Rewards' variable

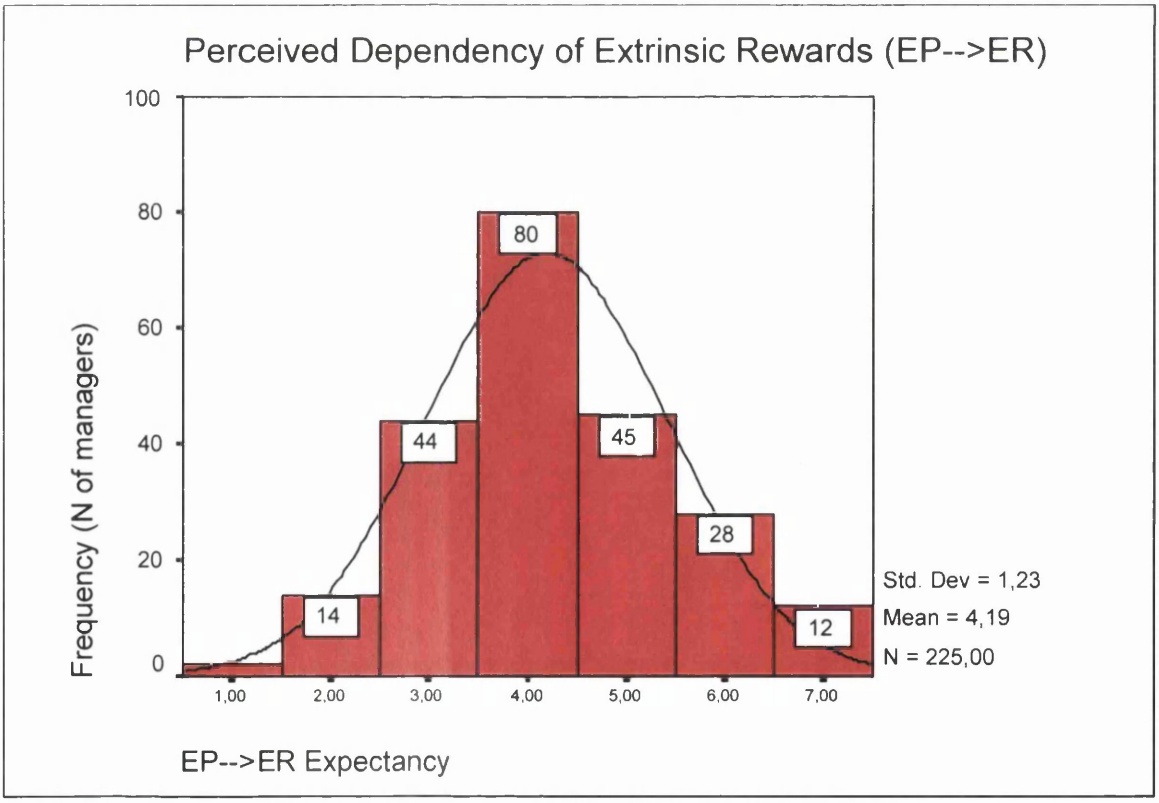


Figure 6-7 : Frequency distribution of the 'EP ER Expectancy' variable

All in all, if one wanted to make an assessment of the motivational effectiveness of the company's formal PMERS on the basis of the expectancy-theory model adopted, in light of the above evidence he would predict that the system is most likely to fail to fulfill its motivational potential. As mentioned earlier, the particular model places substantial emphasis on the sequential nature of the PMERS and on the importance of the linkages between each single stage of the Performance Measurement→Evaluation→Reward process, in the sense that any perceived deficiency in any one stage of this process is essentially considered enough to break down the PMERS chain and compromise the system's overall impact on the individual's motivation and subsequent performance (Jiambalvo, 1979). To the extent therefore that the present system is perceived by the company's managers to fall short in

i) measuring accurately and equitably managerial performance, and
ii) linking the administration of organisational rewards to the evaluation of individual performance,

it should not be expected to effectively perform its motivational function.

If this is the case, however, it immediately becomes critical to the underlying conceptual logic of this research to provide an alternative explanation for the relatively high level of motivation and performance of the managers in the sample. Given the design limitations of the company's PMERS as these were cited in the previous paragraphs, an alternative source of motivation for the managers surveyed may be sought in the high value that they, on average, attach to the intrinsic rewards associated with their jobs in the organisation (mean perceived value of intrinsic rewards **(IV)** = 5.90).[4] Indeed, this interpretation of the data is logically convincing, as well as consistent with the expectancy-theory model adopted in the present study which specifically emphasizes the role of intrinsic (self-directed) motivation [IV] in complementing the extrinsic component of total motivation [EV (E→P) (P→EP) (EP→ER)].

[4] Descriptive statistics with regard to the type and perceived value of the most frequently mentioned intrinsic rewards as they were identified by the 225 managers in the sample, are presented in Appendix K.

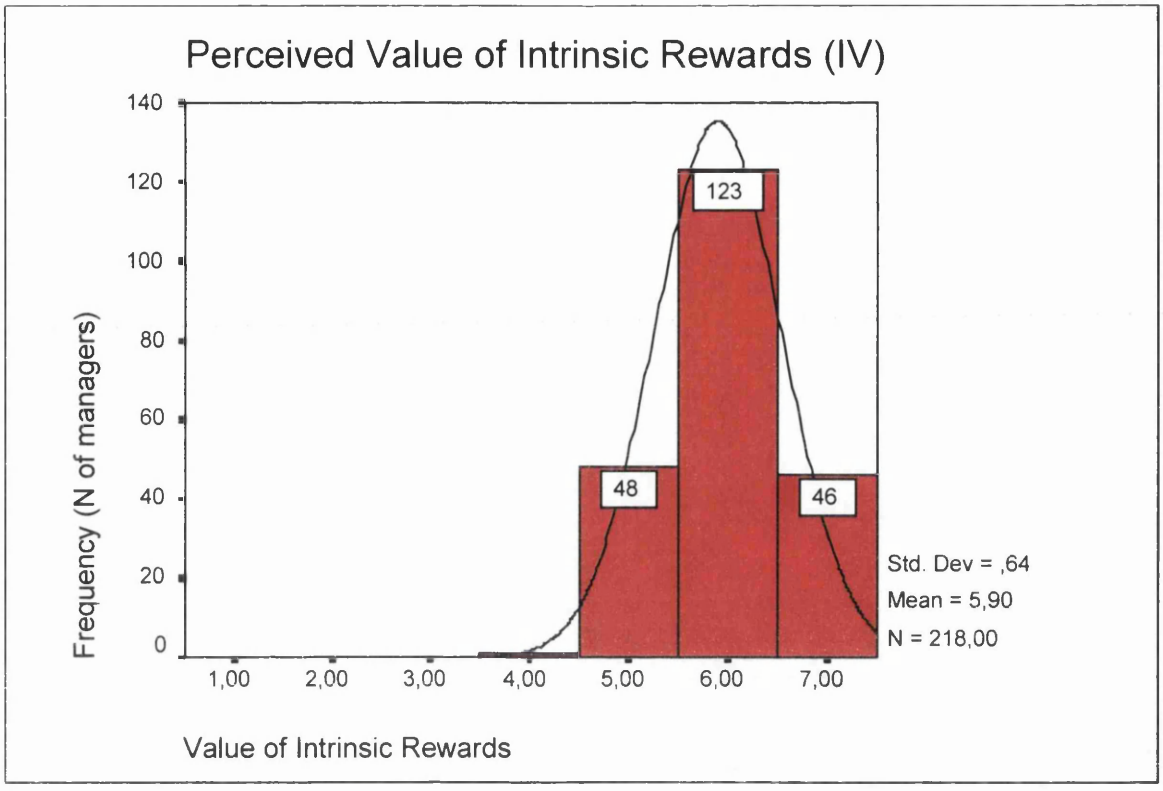


Figure 6-8 : Frequency distribution of the 'Value of Intrinsic Rewards' variable

Table 6-2 reports summary descriptive statistics (number of cases N, minimum and maximum value, mean, standard deviation, and kurtosis) for all the variables measured in the study.

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	225	,50	33,00	3,03	4,07	21,503
E-->P Expectancy	225	2,00	7,00	5,22	1,42	,140
P-->EP Expectancy	225	1,00	7,00	4,14	1,48	-,433
EP-->ER Expectancy	225	1,00	7,00	4,19	1,23	-,370
Value of Extrinsic Rewards	225	2,33	7,00	5,57	,84	,846
Value of Intrinsic Rewards	218	4,00	7,00	5,90	,64	-,311
Motivation	225	3,00	7,00	5,97	,92	,519
Performance	225	3,00	7,00	5,62	,70	1,235
External Environmental Uncertainty	225	2,00	7,00	4,82	,88	,850
Task Uncertainty	225	1,89	7,00	4,56	1,07	-,313
Valid N (listwise)	217					

Table 6-2 : Descriptive Statistics - All variables

6.3 Inferential Analysis

6.3.1 Description of the Data Analysis Methods

The type of research questions considered in this study, as well as the nature of the data gathered through the questionnaire survey administered, suggest that the data should be analysed in ways that basically allow to determine if there exist consistent and statistically significant relationships, first amongst the managerial perceptions data themselves, and then between them and the managers' motivation and performance data. Accordingly, a twofold approach to data analysis has been adopted here that involves testing the hypotheses designated in Chapter 3, firstly by using correlation coefficients to assess the degree of relationship between the variables identified in each hypothesis (i.e., testing for relationships), and secondly by dividing the sample into high and low groups on the basis of one variable and then comparing the mean scores of these high and low groups on the second variable (that is, testing for group differences).[5]

More specifically, for all the hypotheses to be tested, correlation tests (both the typical Pearson's r correlation coefficients, and their non-parametric equivalent, the Spearman correlations) were initially run in order to determine the strength, direction and significance of the relationship between the two variables identified in the hypothesis. Subsequently, the commonly used t-tests (unrelated), as well as their non-parametric alternative, the Mann-Whitney tests (recommended by Siegel and Castellan (1988) as the most appropriate for large-sized sample groups ($m>25$, $n>25$)), were also run in order to confirm the obtained relationships. Again, for each hypothesis that was to be tested, three groups (i.e., a high, a medium, and a low group) were formed on the hypothesis' independent variable, and then comparisons of means were run between the high and the low group in order to detect statistically significant differences in the level of the dependent variable

[5] It has to be noted that the particular approach to data analysis followed in the present study is, in essence, an across-individual analysis. Mitchell (1974b), however, in his review of the empirical literature in the area of expectancy theory specifically indicates the need for within-individual analyses, primarily on conceptual and methodological grounds. Here, a within-individual analysis would have required that comparisons be made across motivation and performance evaluations, so as to examine whether or not different PMERS-related and environmental uncertainty perceptions actually lead to significantly different levels of motivation and performance for the aggregate population of the 225 middle-level managers surveyed. Kopelman (1977), on the other hand, compared the within- and across-individual approaches, noting that the within-individual method was only slightly superior in predicting work effort (i.e., motivation). A within individual analysis performed by Parker and Dyer (1976) also resulted in a level of predictive accuracy consistent with the findings of most across-individual studies. These results, together with the practical difficulties involved in performing a within-individual analysis, led to the adoption of an across-individual analysis in the present study.

among these two extreme groups.[6] The underlying logic of this high group-versus-low group comparison method is that, provided that the groups are properly formed on the basis of the independent variable, the larger the mean difference between the groups on the dependent variable, the stronger is considered to be the relationship between this dependent and the independent variable of the hypothesis.[7]

The decision was made in the present study to use both parametric and non-parametric statistical techniques in testing the hypotheses put forward. Despite the long tradition in the area of expectancy theory of utilising mainly parametric statistical approaches for hypothesis testing, it was difficult to justify here the use of such techniques merely on grounds of research conventionality. Strictly statistically speaking, the use of parametric tests is warranted only when a number of necessary requirements about the collected data can be safely assumed to have been met, such as that

i) the data are measured, at the minimum, on an interval scale (i.e., assuming an interval level of measurement)

ii) the data have been drawn from approximately normally distributed population(s) (that is, assuming a normal distribution of the data used)

iii) the data used come from populations which have roughly the same amount of variability (i.e., assuming homogeneity of variance in the sample groups or in the conditions compared) (Greene & D'Oliveira, 1982).

Even if we accept the normality and the equal variances assumptions to be valid in this particular research - assumptions that are anyway very difficult to prove in practice (Miller, 1984) - the data

[6] The same analysis for group differences was run once more, after defining the groups according to the 'cut point' method. A numeric cut point (close to the median) was first identified for each hypothesis' independent variable and then used to separate the two groups for the comparison ; all scores below the cut point formed the low-group and all scores at the same level or over the cut point formed the high-group. These additional tests for group differences yield, in every case, virtually the same results as the initial comparison-of-means analysis does (see Table 6.5 below).

[7] It should be noted that the t-values and the correlation coefficients used here are statistically comparable measures, since both are estimates of the proportion of variance accounted for. As Hays (1963) points out, t-values, like correlation coefficients, indicate the proportion of the total variance in one variable that can be accounted for by knowing the other. Thus, by comparing two t-values that are based upon samples of similar size, it is possible to determine which of two relationships is stronger ; a larger t-value reflects the fact that a stronger relationship exists between the two variables upon which it is based, than exists between the two variables upon which the smaller t-value is computed. The main advantage, however, that the high-versus-low comparison approach presents, is that it makes fewer and less stringent statistical assumptions about the data - for instance, it does not require, as the correlation coefficient method does, that both variables be measured on equal interval scales.

gathered here refer to human perceptions and, although they have been purposefully measured so as to have some quantitative meaning, they can hardly be regarded as 'natural' interval-level data in the strict definition of the term ; rather, they seem much more of an ordinal nature. To the extent then that there are reasonable concerns about possible departures from the assumptions necessary to use parametric statistical procedures, it has been considered sensible in this study to also test the proposed hypotheses through non-parametric (otherwise called distribution-free) techniques, which have the advantage of not making numerous stringent assumptions about the population from which the data have been sampled (Siegel & Castellan, 1988), with the hope that the same conclusions will be reached by both types of tests. As such, the sections that follow present the findings from the data analysis conducted by systematically reporting both the parametric and the non-parametric test results.

6.3.2 Hypotheses Testing

Tables 6-3 and 6-4 report the correlation coefficients (both parametric and non-parametric) among the different variables identified in the hypotheses posed and tested in this research. Next, the Mann-Whitney and t-test analysis, performed to re-examine these hypotheses at a second level, is presented in Table 6-5.

Matrix of Pearson's r Correlations

	Motivation	E-->P Expectancy	P-->EP Expectancy	EP-->ER Expectancy	Value of Extrinsic Rewards	Value of Intrinsic Rewards	Performance	External Environmental Uncertainty	Task Uncertainty
Motivation	1,000								
E-->P Expectancy	,008	1,000							
P-->EP Expectancy	,036	,627**	1,000						
EP-->ER Expectancy	,132*	,067	,138*	1,000					
Value of Extrinsic Rewards	,139*	-,067	-,071	,239**	1,000				
Value of Intrinsic Rewards	,167**	-,147*	-,138*	,090	,079	1,000			
Performance	,506**	,049	,096	,052	,144*	,099	1,000		
External Environmental Uncertainty	,058	-,382**	-,425**	,118*	,203**	,143*	-,044	1,000	
Task Uncertainty	,075	-,264**	-,314**	,101	,143*	,111	,085	,592**	1,000

*. Correlation is significant at the 0.05 level (1-tailed).

**. Correlation is significant at the 0.01 level (1-tailed).

Table 6-3 : Pearson's r Correlations

Matrix of Spearman Correlations

	Motivation	E-->P Expectancy	P-->EP Expectancy	EP-->ER Expectancy	Value of Extrinsic Rewards	Value of Intrinsic Rewards	Performance	External Environmental Uncertainty	Task Uncertainty
Motivation	1,000								
E-->P Expectancy	,015	1,000							
P-->EP Expectancy	,044	,537**	1,000						
EP-->ER Expectancy	,125*	,106	,166**	1,000					
Value of Extrinsic Rewards	,165**	-,008	-,029	,210**	1,000				
Value of Intrinsic Rewards	,156*	-,145*	-,129*	,063	,060	1,000			
Performance	,445**	,111*	,144*	,029	,160**	,074	1,000		
External Environmental Uncertainty	,082	-,248**	-,324**	,107	,174**	,114*	-,074	1,000	
Task Uncertainty	,048	-,129*	-,209**	,074	,099	,101	,063	,431**	1,000

*. Correlation is significant at the .05 level (1-tailed).

**. Correlation is significant at the .01 level (1-tailed).

Table 6-4 : Spearman Correlations

Hypothesis	Mean - High Group	Mean - Low Group	Mean Difference (High vs. Low Group) [8]	t-value	Significance of t	Mann-Whitney U value	Significance of Mann-Whitney U
E→P Expectancy → Motivation	6.093 (n=43)	6.039 (n=51)	0.054	0.273	n/s	1057.0	n/s
P→EP Expectancy → Motivation	6.136 (n=44)	5.909 (n=66)	0.227	1.234	n/s	1228.0	p<0.10
EP→ER Expectancy → Motivation	6.159 (n=63)	5.809 (n=68)	0.350	2.235	p<0.05	1709.5	p<0.05
Value of Extrinsic Rewards → Motivation	6.169 (n=59)	5.828 (n=64)	0.341	2.130	p<0.05	1451.0	p<0.01
Value of Intrinsic Rewards → Motivation	6.043 (n=46)	5.625 (n=48)	0.418	2.118	p<0.05	865.5	p<0.05
Motivation → Performance	5.956 (n=69)	5.127 (n=55)	0.829	6.659	p<0.01	800.5	p<0.01
External Uncertainty → E→P Expectancy	4.217 (n=46)	5.689 (n=45)	-1.472	-4.250	p<0.01	628.0	p<0.01
Task Uncertainty → E→P Expectancy	4.342 (n=41)	5.348 (n=46)	-1.006	-2.664	p<0.01	692.0	p<0.05
External Uncertainty → P→EP Expectancy	3.196 (n=46)	4.911 (n=45)	-1.715	-5.064	p<0.01	528.0	p<0.01
Task Uncertainty → P→EP Expectancy	3.293 (n=41)	4.478 (n=46)	-1.185	-3.106	p<0.01	626.0	p<0.01
External Uncertainty → Motivation	6.022 (n=46)	5.822 (n=45)	0.200	0.982	n/s	937.0	n/s
Task Uncertainty → Motivation	6.000 (n=41)	5.870 (n=46)	0.130	0.621	n/s	855.5	n/s

Table 6-5 : Mann-Whitney & T-Test Results

Note : An attempt was made in the present study to run both the t-tests and the Mann-Whitney tests shown in Table 6-5 by comparing clearly extreme high and low groups. Following Porter & Lawler (1968), it was decided that, consistently for all hypotheses that were to be tested, a group comprising approximately the highest one third of scores on the hypothesis' independent variable should be compared with a group comprising approximately the bottom one third of scores on that variable. By always concentrating on the top third and bottom third segments of the independent variable, it was hoped that two distinctly different groups of roughly the same size would be obtained for the comparisons of means.

6.3.2.1 Determinants of managerial motivation : The impact of the PMERS-related perceptions on managers' motivation and performance (H1, H2, H3, H4, H5 and H6)

In this first section, the six hypotheses that refer to the determining effect of the manager's PMERS-related perceptions on his motivation and subsequent performance are examined.

Perceived Attainability of Standards (E→P) and Managerial Motivation

Hypothesis 1 predicted a positive relationship between the manager's perception about the attainability of the performance standards set within the PMERS (E→P), and his / her motivation (M), stating that :

H1 : Middle-level managers who believe that they are able to attain the standards of performance as these are established within the PMERS, will experience a higher level of motivation than those middle-level managers who do not.

The results of the tests run do not offer much support to H1. Neither the Pearson (Table 6-3) nor the Spearman correlation coefficient (Table 6-4) calculated to test this hypothesis reveal any significant relationship between the perceived attainability of standards (E→P) and managerial motivation (M). Similarly, no statistically significant difference is detected in the level of motivation between the high-(E→P) and the low-(E→P) group of middle-level managers by the Mann-Whitney and the t-tests run (Table 6-5). Hence, H1 is rejected. There is no evidence of the manager's perceptions about how attainable the PMERS-identified performance standards are, significantly affecting the manager's motivation.

Perceived Accuracy of Measures (P→EP) and Managerial Motivation

The second hypothesis concerning the determination of managerial motivation predicted a positive relation between the manager's perception about the accuracy of the performance measures employed by the PMERS (P→EP), and his / her motivation (M). Hypothesis 2 thus stated :

H2 : Middle-level managers who believe that their actual performance is captured accurately and evaluated equitably by the measures employed within the PMERS,

will experience a higher level of motivation than those middle-level managers who do not.

None of the parametric and non-parametric analyses performed and presented in Tables 6-3, 6-4 and 6-5 produce results that can support Hypothesis 2 about the relationship between the perceived accuracy of measures (P→EP) and managerial motivation (M). With the exception of the Mann-Whitney test which shows, as predicted by H2, a significantly ($p<0.10$) higher level of motivation in the high-(P→EP) group as compared to the low-(P→EP) group of middle-level managers, the rest of the correlations and group differences obtained, although always in the expected direction, fail to reach statistically significant levels. On the basis of this evidence, H2 has to be rejected. There appears to be no significant impact on the managers' motivation as a result of their perceptions about how accurate the PMERS-employed performance measures are.

Perceived Dependency of Extrinsic Rewards (EP→ER) and Managerial Motivation

Concerning the effect of the perceived dependency of rewards (EP→ER) on managerial motivation (M), Hypothesis 3 stated that :

H3 : Middle-level managers who believe that the rewards they receive by the organisation are contingent on their PMERS-evaluated performance, will experience a higher level of motivation than those middle-level managers who do not.

The positive relationship predicted between the manager's motivation and his / her perception about how performance-dependent the rewards that he / she receives are, is unanimously confirmed by all the tests run. The results which are presented in Tables 6-3 and 6-4 show a statistically significant ($p<0.05$) and positive correlation ($r = 0.132$, $\rho = 0.125$) between (EP→ER) and (M). Moreover, the Mann-Whitney and t-test results (Table 6-5) indicate that the difference in motivation between the high-(EP→ER) and the low-(EP→ER) group of middle-level managers is also significant at the 95% level, and in the expected direction. All in all, these results seem to support our hypothesis that the stronger the managers believe that the organisational rewards they receive are dependent on their PMERS-evaluated performance, the higher is their level of motivation to perform on their job.

Perceived Value of Extrinsic Rewards (EV) and Managerial Motivation

Hypothesis 4 predicted a positive relationship between the manager's perception about the value (desirability, attractiveness) of the organisational rewards that he / she receives through the PMERS (EV), and his / her motivation to perform (M). It formally stated that :

H4 : Middle-level managers who value highly the extrinsic rewards that are administered to them through the company's PMERS, will experience a higher level of motivation than those middle-level managers who do not.

As shown in Tables 6-3 and 6-4, both the parametric and the non-parametric correlation coefficients indicate a statistically significant (at the 95% level and above) and positive relationship ($r = 0.139$, $\rho = 0.165$) between the perceived value of extrinsic rewards (EV) and managerial motivation (M). These results are supported by the Mann-Whitney and t-tests performed (see Table 6-5), as significant differences ($p<0.05$ and above), in the direction predicted, are observed in the level of motivation between high-EV and low-EV groups. The high-EV group of middle-level managers appears to consistently exhibit a higher level of motivation than the low-EV group. On the whole, these findings provide support to Hypothesis 4, illustrating the importance of the managerial perceptions about the value of the PMERS-administered rewards to the managers' motivation.

Perceived Value of Intrinsic Rewards (IV) and Managerial Motivation

Hypothesis 5 proposed a positive relationship between the manager's motivation and the value that he / she assigns to the intrinsic rewards that he / she identifies with his / her job. H5 formally stated :

H5 : Middle-level managers who value highly the intrinsic rewards that are associated with their job in the organisation, will experience a higher level of motivation than those middle-level managers who do not.

The results obtained provide full support to Hypothesis 5. Both the Pearson and the Spearman correlation coefficients calculated in order to test the hypothesis reveal a statistically significant (at the 95% level and above) positive relationship ($r = 0.167$, $\rho = 0.156$) between the perceived

value of intrinsic rewards (IV) and managerial motivation (M). Furthermore, statistically significant differences ($p<0.05$) in the predicted direction are detected in the motivation levels of the high-IV and the low-IV group of middle-level managers, both by the Mann-Whitney and the t-tests run (see Table 6-5). Clearly in conformity with our expectations, the data suggest that the more a manager values the intrinsic rewards that are associated with his / her job role, the higher his / her level of motivation is expected to be.

Figure 6-9 presents a graphical depiction of the high-versus-low group comparisons for hypotheses 1 to 5. As indicated by the upward slope of the lines in the graph, for all the independent variables / determinants of managerial motivation examined, the high (EV, E→P, P→EP, EP→ER, IV) group of middle-level managers exhibits consistently - as predicted by the hypotheses posed - a higher level of motivation than the low (EV, E→P, P→EP, EP→ER, IV) group respectively.

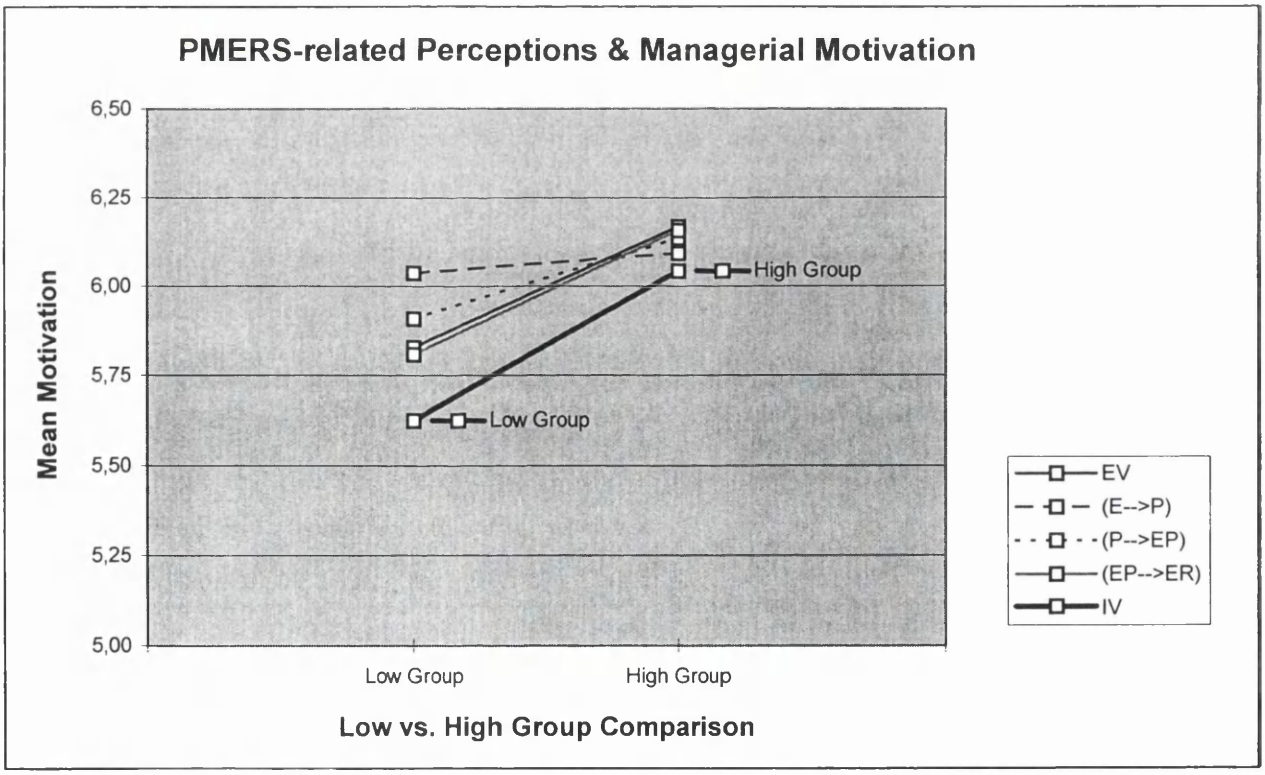


Figure 6-9 : High vs. Low Group Comparisons - Hypotheses 1 - 5

Motivation and Managerial Performance

With regard to the effect of the manager's motivation on his / her subsequent performance, Hypothesis 6 predicted that :

H6 : Middle-level managers who experience a high level of motivation, will exhibit a higher level of job performance than those middle-level managers who experience a low level of motivation.

As expected, Hypothesis 6 is overwhelmingly confirmed by the results of the analysis conducted. Both the parametric and the non-parametric correlation coefficients calculated (Tables 6-3 and 6-4) show a very strong, positive ($r = 0.506$, $\rho = 0.445$), and significant (at the 99% level) relationship between managerial motivation and managerial performance. These findings are supported by the Mann-Whitney and t-test results, which unanimously indicate - as predicted by H6 - a significantly ($p<0.01$) higher level of performance in the high-motivation group as compared to the low-motivation group of middle-level managers (see Table 6-5). Overall, this evidence unambiguously supports the hypothesis put forward, that managers who are highly motivated are much more likely to be high performers. Additional correlation analysis, conducted both at a parametric and at a non-parametric level (see Appendix L), reveals also that managers who experience high motivation tend to exhibit not only significantly higher overall job performance but also significantly ($p<0.01$) higher performance in every individual dimension of their everyday managerial work (i.e., planning, investigating, co-ordinating, evaluating, supervising, staffing, negotiating, representing, etc.), a result that further reinforces the argument about a very strong relationship between motivation and subsequent performance.

6.3.2.2 The intervening effect of environmental uncertainty (H7, H8 and H9)

This second section examines the last three hypotheses that refer to the intervening effect of environmental uncertainty, directly on some of the manager's PMERS-related perceptions, and indirectly on his / her motivation and subsequent performance.

Perceived Environmental Uncertainty and Perceived Attainability of Standards (E→P)

Hypothesis 7 predicted a negative relationship between perceived environmental uncertainty and the manager's perception about how attainable the PMERS-identified performance standards are (E→P). It formally stated that :

H7 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will regard the PMERS-defined standards of performance as less attainable, than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

The test results supporting this hypothesis are substantial. Both the Pearson and the Spearman correlation coefficients indicate strong, negative (r ranging from -0.264 to -0.382, ρ ranging from -0.129 to -0.248), and significant ($p<0.01$) relationships between the perceived attainability of standards (E→P) and each of the two measures of perceived environmental uncertainty employed in the study (that is, EU measuring the uncertainty the manager feels he encounters in his external environment, and TU measuring the uncertainty the manager sees evident in his everyday task (internal) environment). This dual relationship between (E→P) and EU, and (E→P) and TU is hardly surprising, especially given the significant ($p<0.01$) and high positive correlation between the two measures of perceived environmental uncertainty (see Tables 6-3 and 6-4). The Mann-Whitney and t-test results further validate the correlations obtained. Fairly large, in the direction predicted, and statistically significant at the 99% level differences in the managers' perceptions about how attainable the standards of performance are, are evident between the high-uncertainty and the low-uncertainty group of middle-level managers. All in all, these results leave little doubt that the manager's perception about the level of uncertainty in his / her environment has an effect on his / her perception about the attainability of the performance standards set within the PMERS. Hypothesis 7 is therefore supported.

Perceived Environmental Uncertainty and Perceived Accuracy of Measures (P→EP)

In the same vein with H7, Hypothesis 8 predicted a negative relationship between perceived environmental uncertainty and the manager's perception about how accurate the PMERS-employed performance measures are (P→EP), stating that :

H8 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will regard the PMERS-employed measures of performance as less able to capture accurately and evaluate properly their actual performance, than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

As before, the results obtained unanimously provide support to H4. Both the parametric (Table 6-3) and the non-parametric tests of association (Table 6-4) indicate strong, negative (r ranging from -0.314 to -0.425, ρ ranging from -0.209 to -0.32) and significant (at the 99% level) relationships between - unsurprisingly - both measures of perceived environmental uncertainty (EU, TU), and the manager's perception about the accuracy of performance measures (P→EP). It appears that the more uncertain the manager perceives his / her environment to be, the less convinced he / she is about the ability of the PMERS-employed measures to capture and evaluate properly his / her actual performance. These results are once again verified by the Mann-Whitney and t-tests run, which both show, as predicted by H8, a significantly ($p<0.01$) stronger confidence in the accuracy of performance measures in the low-uncertainty group as compared to the high-uncertainty group of middle-level managers (see Table 6-5). Hence, the two hypotheses about the alleged adverse impact of perceived environmental uncertainty on the PMERS-related managerial perceptions about the attainability of performance standards (E→P) and about the accuracy of performance measures (P→EP) are both categorically confirmed.

The high-versus-low group comparisons for hypotheses 7 and 8 are graphically presented in Figures 6-10 and 6-11. In contrast to Figure 6-9, the downward slope of the lines in these graphs indicates that the high-uncertainty group of middle-level managers has, in every case, a lower level of (E→P) / (P→EP) than the low-uncertainty group, as the hypotheses predicted.

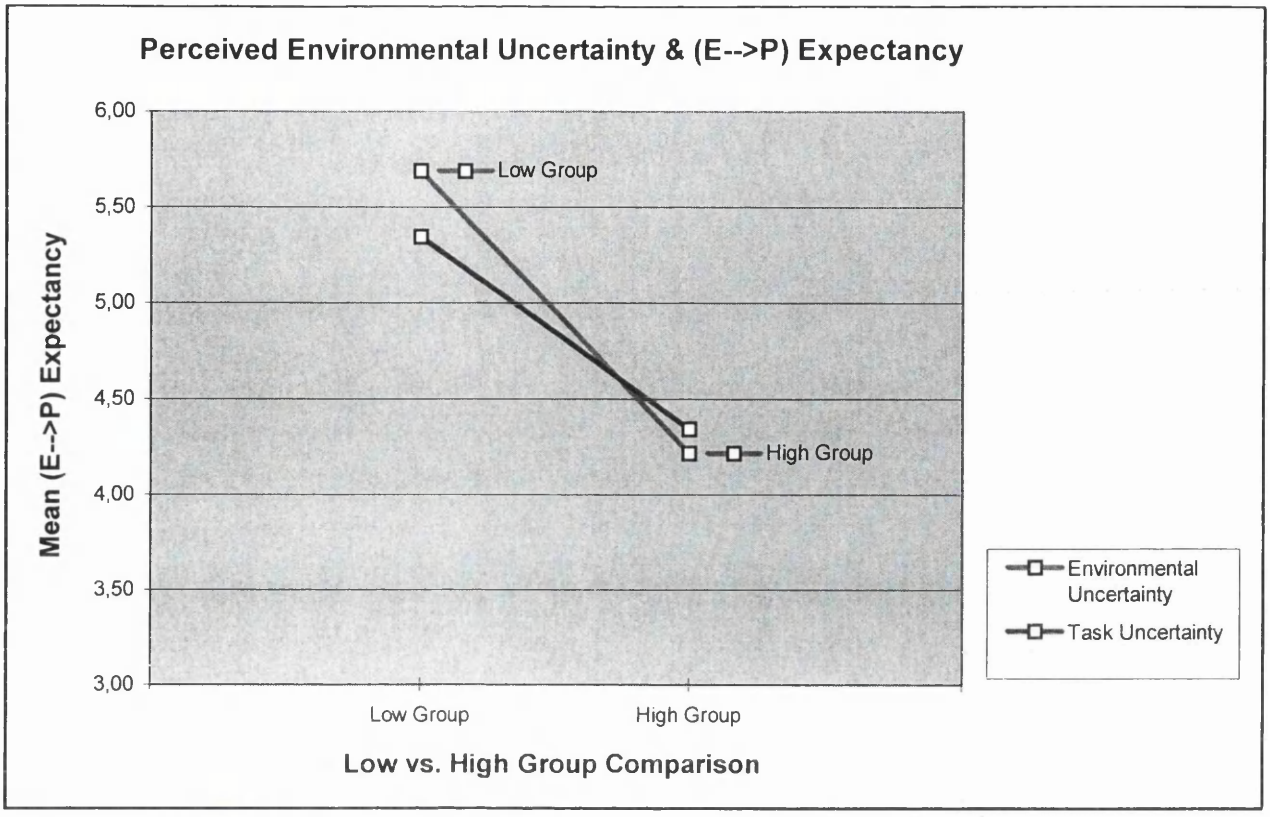


Figure 6-10 : High vs. Low Group Comparisons - Hypothesis 7

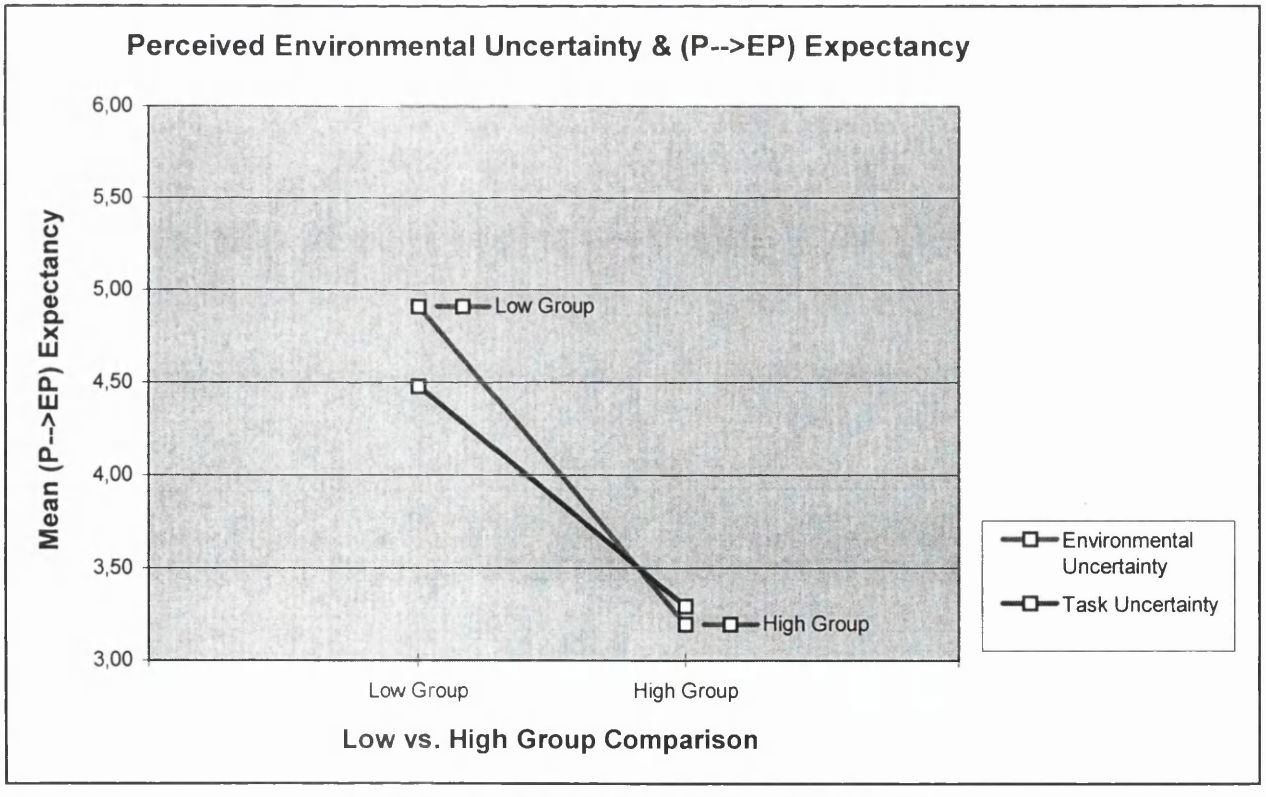


Figure 6-11 : High vs. Low Group Comparisons - Hypothesis 8

Perceived Environmental Uncertainty and Managerial Motivation

With regard to the direct effect of perceived environmental uncertainty on the manager's motivation, Hypothesis 9 predicted :

H9 : Middle-level managers who believe that they are faced with a high level of environmental uncertainty, will experience a lower level of motivation than those middle-level managers who believe that they are faced with a low level of environmental uncertainty.

This hypothesis is not supported by the findings of the analysis performed. Neither the Pearson nor the Spearman correlation coefficients show any significant relationship between either of the measures of perceived environmental uncertainty (EU, TU) and managerial motivation (M) (Tables 6-3 and 6-4). In like manner, the Mann-Whitney and t-tests carried out do not indicate any significant difference in the level of motivation between the high-uncertainty and the low-uncertainty group of middle-level managers. On this evidence, H9 has to be rejected. The data seem to suggest that the manager's perception about the level of uncertainty in his / her environment has apparently no bearing on his / her motivation. This finding is somewhat unexpected, particularly given the fact that the preceding in logical order hypotheses 7 and 8 were overwhelmingly confirmed. Possible explanations for this result are offered in Chapter 7, where all the findings from the data analysis conducted are evaluated and discussed at length.

Table 6-6 below provides an overview of the nine hypotheses tested. In this table, the results of the different analyses carried out are summarised. For hypotheses labelled 'supported', the direction of the coefficient (or mean difference) was as expected, and the level of significance was sufficient ($p<0.10$, one-tailed).

Hypothesis	Pearson's r	Spearman	t-test	Mann-Whitney test
H1 : E→P Expectancy → Motivation	rejected	rejected	rejected	rejected
H2 : P→EP Expectancy → Motivation	rejected	rejected	rejected	supported
H3 : EP→ER Expectancy → Motivation	supported	supported	supported	supported
H4 : Value of Extrinsic Rewards → Motivation	supported	supported	supported	supported
H5 : Value of Intrinsic Rewards → Motivation	supported	supported	supported	supported
H6 : Motivation → Performance	supported	supported	supported	supported
H7 : Perceived Uncertainty → E→P Expectancy	supported	supported	supported	supported
H8 : Perceived Uncertainty → P→EP Expectancy	supported	supported	supported	supported
H9 : Perceived Uncertainty → Motivation	rejected	rejected	rejected	rejected

Table 6-6 : Overview of Results of Hypotheses Testing

6.4 Further Analysis

6.4.1 Secondary Bivariate Analysis

In an attempt to uncover relationships between the variables of the study, other than the ones prescribed by the hypotheses already proposed and tested in the previous sections, the group comparison method was once more employed ; the total sample of the 225 middle-level managers was cut into distinct groups on the basis of a number of variables in the research, so as to compare the level of the other variables in these groups and identify latent relationships.

Initially, the total sample was split into a high-uncertainty and a low-uncertainty group on the basis of the task uncertainty (TU) variable. The descriptive statistics run and presented in Appendix M indicate that between the high- and the low-uncertainty group - apart from the statistically significant differences in the levels of (E→P) (the manager's perception about the attainability of performance standards) and (P→EP) (the perception about the accuracy of performance measures) predicted by and confirmed in hypotheses 7 and 8 - differences exist also

in the levels of (EP→ER) (the perception about the dependency of extrinsic rewards) and EV (the perception about the value (attractiveness) of the extrinsic rewards offered), with the high-uncertainty group of middle-level managers consistently exhibiting a significantly higher level of (EP→ER) ($p<0.05$) and EV ($p<0.01$) than the low-uncertainty group. Nevertheless, more detailed analysis on the middle-level managers' specific reward preferences in the two groups does not reveal any particular effect of the environmental uncertainty variable on these reward preferences. Indeed, the pattern of preference for extrinsic and intrinsic rewards, short-term effect and long-term effect rewards, tightly-connected to individual performance and loosely-connected to individual performance rewards remains essentially the same in the two groups, although the managers in the high uncertainty situation seem to have a tendency to appreciate more (i.e. value higher) all different types of rewards than the managers in the low uncertainty situation. In addition, the middle-level managers in the low-uncertainty group appear to have, on average, significantly higher ($p<0.01$) position experience than the middle-level managers in the high-uncertainty group.

Subsequently, the total sample was divided on the basis of the managers' position in the organisational hierarchy (directors - senior managers - associate directors - managers). However, the descriptives calculated (see Appendix M) indicate no additional real differences in any of the variables measured in the study between these four groups. In contrast, the segregation of the total sample of managers in terms of their motivational orientation (into an extrinsically motivated, an intrinsically motivated, and a simultaneously extrinsically and intrinsically motivated group), although does not reveal any significant mean differences between the particular groups either, it does provide some useful insights on the managers' (extrinsic and intrinsic) rewards preferences. The Chi-Square tests conducted (see Appendix N) indicate that a highly significant number of middle-level managers are likely to value highly, and thereby be motivated by *both* the extrinsic and the intrinsic rewards that they perceive to enjoy in the context of their job, rather than by any one type of these rewards alone. In addition, further analysis of the middle-level managers' rewards preferences, both through Friedman tests and through Kendall's W tests (Appendix N), shows that there are large individual differences in the perceived value that different managers assign to the different (extrinsic and intrinsic) rewards available ; stated differently, it is evident that the managers in the sample tend to have significantly different preferences (perceived valences in expectancy theory terms) for the various (extrinsic and

intrinsic) rewards that they perceived to receive in the context of their job. Together, the last two results seem to suggest that managers are motivated by *different combinations* of the extrinsic and intrinsic rewards that are available to them.

The implications of all the above findings are thoroughly discussed in Chapter 7.

6.4.2 Multivariate Analysis

In addition to the bivariate analysis presented in the previous section, a multiple regression modelling approach was utilised in order to arrive at a more comprehensive understanding of the data. In general, all multivariate techniques aim to break down the dependent variable's total variance due to independent variables into the variance due to each independent variable separately and to any interactions between these independent variables (Greene & D'Oliveira, 1982). Particularly useful in studies such as this one, where more than one independent variables (here, a range of managerial perceptions about the PMERS and the level of uncertainty in the manager's environment) are hypothesised to have an effect on the study's dependent variable (in this case, managerial motivation), such techniques can also provide useful information about which of the independent variables identified has the strongest relationship with (partial correlation analysis), and the greatest impact on (partial regression analysis) the dependent variable (de Vaus, 1996).

Hence, two multiple linear regression models were initially constructed, both of them positing managerial motivation (M) as their dependent variable. Model 1 included only the five PMERS-related managerial perceptions (EV, E→P, P→EP, EP→ER, IV) that have been theorised in this research to jointly determine the manager's motivation, and Model 2 included both the five PMERS-related perceptions / determinants of managerial motivation of Model 1, and the two environmental uncertainty variables (EU, TU) that have been hypothesised to moderate the relationship between the PMERS-related perceptions and motivation. Fundamentally, the intention of this analysis was to run the two multiple regression models separately, and then compare their results in order to come up with some insights on

- the ability of the expectancy-theory variables of the study (EV, E→P, P→EP, EP→ER, IV) to predict managerial motivation (M), with and without the contribution of the uncertainty variables (EU, TU)

- the relative impact and relationship that each independent variable has with managerial motivation, when the effects of the other independent variables have been removed.

The results of this multivariate analysis - presented in Appendix O - are somewhat discouraging. None of the two models constructed seems to fit the data particularly well. The level of explained variation (R^2) of the dependent variable, managerial motivation (M), is found to be low in every case - essentially, none of the two models can account for more than 5.5% of the total observed variability in the dependent variable (R^2 = 5.2% and 5.5% for Model 1 and Model 2 respectively). On top of the previous analysis, a range of different multiple linear regression models, each containing different combinations of the study's independent variables, were first built either through the backward elimination procedure or through the stepwise variable selection approach and then tried out. However, none of these models results in R^2 greater than 5.5%. Lastly, the total sample was split on the basis of the uncertainty variable, and the two models were separately run for each of the two high- and low-uncertainty sub-samples. Again, in no case the level of expected variation (R^2) exceeds the 10.6% point. On the whole, these findings cast serious doubt upon the ability of the expectancy-theory model adopted in the present study to explain motivation variations among the managers in the selected sample. One possibility is that they reflect unreliability problems in the scales employed to measure the study's attitudinal variables. Alternatively, they may suggest the presence of other contextual or psychological variables that influence the managers' motivation and have not been included in the given model ; or perhaps they raise some more basic questions about the overall utility of the expectancy model of motivation in the organisational setting in general, and in the managerial setting in particular. However, other alternative explanations for these results are also possible.

One potential explanation may lie in the difficulty of the multiple linear regression technique to explain the variability in the dependent variable on the basis of independent variables that are combined in a multiplicative fashion - as is the case with the expectancy model of motivation underlying this research. For example, Dawes and Corrigan (1974) and Jiambalvo (1979) not only argue but also provide empirical evidence to show that additive expectancy models tend to present superior predictive ability in comparison to multiplicative ones, even when the process underlying the relationship between the independent and the dependent variables is not linear. To examine this possibility here, an alternative version of the expectancy-theory model was

developed and tested, in which the initial five independent variables (EV, E→P, P→EP, EP→ER, and IV) were consolidated into two new independent variables (EM for extrinsic motivation, and IM for intrinsic motivation)[9] that could be more readily combined in an additive fashion.[10] Nevertheless, no significant improvement in the level of the predictive ability of this revised additive model is recorded when the regression analyses are re-run, either for the overall sample, or for the high-uncertainty / low-uncertainty subgroups - in actuality, the R^2 never surpasses the 10.6% point.

Perhaps the reason for the low predictive ability of any multiple regression model constructed and tested can be traced to the general incompatibility of the research data collected with the fundamental assumptions underlying the multiple linear regression analysis. Norusis (1994, 1998) stresses that the use of multiple regression presupposes a number of assumptions about the data, namely that :

- all the observations for the measured variables must be independent (the independence assumption)
- there must be a linear relationship between the dependent and every independent variable (the linearity assumption)
- certainly the dependent variable, and preferably the independent variables as well, must be measured at the interval level (the interval level of measurement assumption)
- for each combination of values of the independent variables, the distribution of the dependent variable must be normal with a constant variance (the normality and the homoskedasticity assumptions)

[9] Indeed, for every middle-level manager a total score for his / her extrinsic motivation component (EM) was calculated, either by consolidating (i.e., adding) or by equally weighting (that is, averaging) his / her separate EV, E→P, P→EP, EP→ER scores, whereas his / her intrinsic motivation component (IM) was taken to be his / her IV score. A multiple linear regression model, that combined these two new terms in an additive mode (i.e., Motivation = $\alpha + \beta 1$*Extrinsic Motivation + $\beta 2$*Intrinsic Motivation), was then constructed and run so as, first, to assess the revised model's predictive ability, and second, to examine the relative impact and relationship of the two independent variables (EM), (IM) with the dependent variable of motivation (M).

[10] Schmidt's (1973) objection that the combinations (additive or multiplicative) of variables that are included in expectancy-type models are legitimate only to the extent that these variables are measured on a ratio scale has to be noted here. Nevertheless, Hackman and Porter (1968) argue that such procedures are reasonable as long as the scores do in fact relate to the criterion variables of interest. In addition, both Hackman and Porter (1968) and Galbraith and Cummings (1967) have hypothesised and found empirical support for models that employed combinations of expectancy theory variables, a fact that seems to argue for the validity of their variable measurement practices.

– the independent variables examined must not correlate highly with one another (the non-multicollinearity assumption).

A quick look at the scatter-plot matrix presented in Appendix P is enough to realise that at least the linearity assumption is severely violated by the data gathered in this research - evidently, motivation (the dependent variable in all the regression models tried out) does not appear to be linearly related with any of the explanatory variables identified (i.e., EV, E→P, P→EP, EP→ER, IV, EU, and TU).[11] A second objection refers to the fact that more than one observation is obtained from each subject in the study, a measurement practice that clearly violates the strict interpretation of the independence assumption of multiple linear regression. Given also the high, and at times significant, correlations between some of the study's independent variables (see Tables 6-3 and 6-4) which could conceivably have brought about multicollinearity problems, as well as the arguably ordinal nature of the collected data as was supported earlier in section 6.3.1, it is advisable that the results of the multivariate analysis reported here are considered with extreme caution.

In the latter sections of the multivariate analysis shown in Appendix O, the findings of the partial regression and partial correlation analyses conducted are presented. All in all, these findings reveal that, consistently in both models, the manager's perception about the value (importance) of the intrinsic rewards associated with his / her job (IV) is by far the independent variable with the relatively greatest impact on ($b^* = 0.160$ and $b^* = 0.157$ for each model respectively) and the relatively strongest relationship (partial r = 0.159 and 0.156) with the dependent variable, managerial motivation (M), closely followed by the manager's perception about the value (attractiveness) of the extrinsic rewards that he / she receives through the company's PMERS (EV) ($b^* = 0.107$ / $b^* = 0.101$ and partial r = 0.106 / 0.099, for Model 1 / Model 2 respectively). These results are repeated invariably for all the different multiple linear regression models run in this study.

[11] An attempt was made to transform the data into an ln- or an log10-form so as to attain more or less linear relationships between the study's dependent and independent variables, yet in no case is the linearity requirement possible to be met. In addition, all the alternative expectancy models cited above were tested once more, first, via an OSL regression analysis (both in a log-log and in an semi-log formulation), and subsequently, via a multi-ordinal logit regression analysis, however no significant increase in the models' predictive ability (R^2) is observed.

6.5 Summary and Overview

In this chapter, the statistical analysis of the data collected in the study was presented. The early sections of the chapter provided descriptive statistics on the sample of the 225 managers surveyed, as well as a diagnostic analysis of the company's Performance-Measurement-Evaluation-Reward-System on the basis of the managers' responses to the questionnaire. In the latter parts of the chapter, the results obtained from testing the hypotheses posed in the research were reported in full detail. The majority of the hypotheses proposed, both with regard to the determinants of managerial motivation and with respect to the intervening effect of environmental uncertainty, were confirmed. In sum, the findings seem to indicate, first that at least some of the PMERS-related perceptions / hypothesised determinants of managerial motivation can be found to have a strong, positive, and significant relationship with the manager's motivation, and second that perceived environmental uncertainty seems to have a significant adverse effect on some of these managerial perceptions that appear to determine in the final analysis the manager's motivation and subsequent performance.

Chapter Seven :

Discussion of Results & Conclusions

7.1 Introduction

The objective of this study was essentially twofold : First, to investigate the impact of the Performance Measurement, Evaluation and Reward System (PMERS) on middle-level managers' behaviour (motivation and performance), and, second, to examine the moderating effect of environmental and task uncertainty on the PMERS's ability to affect managers' motivation and subsequent performance. This final chapter provides an overview and discussion of the empirical findings presented in the previous chapter. In its early sections, an effort is made to first review the basic strengths and weaknesses of the study, through the prism of which the reader should consider the obtained findings and their implications. Subsequently, the study's results are summarised and discussed within the context of the two relevant bodies of literature - i.e., management control theory and applied organisational psychology - that provided the theoretical foundation of this research. The way in which these findings compare with and contribute to our existing store of knowledge in this area is specifically addressed here. The latter sections of the chapter initially attempt to discuss some relevant implications - both on a practical, as well as on a more theoretical and methodological level - and, finally, close the chapter by highlighting some directions for future research.

7.2 Strengths and Weaknesses of the Study

Before we proceed to the discussion of the study's findings and their implications, it is considered necessary to first briefly refer to the main strengths and weaknesses of the study. Although these strengths and weaknesses - primarily associated with choices in method and methodology - have already been addressed in some detail in the Research Method and Methodology chapter (see Chapter 4, section 4.3 Assessing the Research Method and Methodology Choices), they are briefly reviewed at this point in order to enable the reader to evaluate the study's findings in the light of these advantages and limitations. Overall, the strengths and weaknesses of questionnaire-based studies are well known and documented in the literature. In essence, they reflect trade-offs between internal and external validity, providing data in a form that is suitable for statistical analysis (Campbell & Stanley, 1966 ; Kidder, 1981). The following sections discuss in more detail the study's main advantages and limitations on the basis of the four fundamental evaluation criteria (i.e., internal validity, external validity, construct validity, and reliability) which both Gill and Johnson (1991) and Abernethy et al. (1999) suggest that ought to be considered when one assesses the results of any research endeavour.

7.2.1 Internal Validity

All in all, the level of internal validity of this research is high. This is fundamentally a study of a more positive nature, which is structured upon

i) the *a priori* construction and statement of hypotheses that derive from a given theoretical model (i.e., the expectancy theory of work motivation),
ii) the explicit identification, operationalisation and measurement of carefully selected dependent, independent and intervening variables, and
iii) the collection of data through the use of a highly structured, standardised data-collection method (that is, the pre-coded analytic questionnaire).

It is this structured nature, along with the statistical control over the identified variables in the stage of data analysis that essentially render this study with a relatively high degree of confidence that the conclusions regarding the hypothesised relationships among the designated variables are warranted. However, one should note here the inability of the study to support conclusions regarding the existence and direction of causality between the identified variables (it can only provide evidence of association between them), as well as its difficulty to control for the possible effect of other extraneous variables that are not measured but may nevertheless interact with the

variables of interest - both a direct consequence of the correlational, cross-sectional design employed in this research. Essentially, the above constitute a discrepancy between the statistical significance and the substantive importance of the results reported here, and it is for this reason that special care should be taken in inferring practical implications from these findings.

Having said that, the present study relies heavily on the theoretical arguments and postulates of the most influential theory of work motivation (Jewell, 1998), in Nadler and Lawler's words "...the most comprehensive, valid, and useful approach to understanding motivation" (1977, p.27). Being a process theory of motivation, expectancy theory focuses on the dynamics (i.e., the processes) involved in initiating, directing, and maintaining the individual's behaviour in the workplace, and overall offers a simple, yet compelling, explanation of how people are actually motivated in the organisational setting. At a first glance, the expectancy model of motivation that has been adopted in this research - despite its own theoretical, conceptual, empirical and methodological limitations (cf. Mitchell & Biglan, 1971 ; Mitchell, 1974, 1979, 1982 ; Heneman & Schwab, 1972 ; Campbell & Pritchard, 1976 ; Schwab et al., 1979 ; Wanous et al., 1983 ; Van Eerde & Thierry, 1996) - appears to provide a theoretically sound and logically convincing network of relationships among variables which, in a dynamic state, are hypothesised to jointly determine the individual's motivation and subsequent performance in his / her job.

7.2.2 External Validity

Traditionally survey research is endowed with a high level of overall external validity (generalisability) (Abernethy et al., 1999). Survey-based research endeavours most usually entail the careful random selection of samples that enable the obtained findings to be generalised to wider populations with a high degree of confidence. However, to the extent that the present study draws data from a single research site and from a non-random (and therefore not representative of the entire target population) sample, its population validity - that is, its ability to generalise from the sample of managers involved in the study to the wider managerial population - is necessarily limited. At best then, the results of this study can be extrapolated to apply to a particular cohort of managers, i.e., those highly motivated and highly performing managers operating at the middle-level of the organisation's hierarchy.

As far as the study's ecological validity is concerned (that is, its ability to provide results that can be readily generalised from the actual social context in which the research has taken place to other contexts and settings (Gill & Johnson, 1991)), the high degree of standardisation and structure of the instrument used to collect data is likely to have created a relative lack of naturalism that may have thereby adversely affected the study's overall ecological validity. Although the present research employed an observational, on-the-field method to gather data from respondents who were real organisational participants acting within their actual social context (a definite advantage in terms of ecological validity), the - almost - exclusive emphasis on closed-response, pre-coded questions in the analytic questionnaire used in the data-collection stage is possible to have prevented the managers surveyed from articulating the ways in which they themselves personally conceptualise and understand the matters of interest.

Acknowledging this threat to the study's ecological validity which principally results from the artificiality of the main data-collection method, an attempt was made to gather additional data from secondary sources within the participant company which could enrich and provide triangulation for the findings that emerged from the questionnaire survey. These more qualitative data that were collected in two separate instances - first, in a focus-group discussion with a team of top executives, and, later, in a forum-like event with a larger group of middle managers, where the quantitative results from the survey were fed back and extensively discussed with participants and non-participants in the research - provided, together with the open-ended questions in the questionnaire, additional insights into the issues under investigation, and certainly lent a 'flavour' of naturalism to the study, extending thereby its external validity. All things considered, however, the overall external validity of the present research is held to be relatively low for the reasons discussed earlier, and therefore its findings should only be generalised to different populations and settings with caution.

7.2.3 Construct Validity

With regard to the construct validity of the study, the fact that all dependent, independent and intervening variables were measured with instruments drawn from the literature, which have been previously developed and extensively tested in practice, gives some confidence about the extent to which the constructs of theoretical interest have been successfully operationalised and measured here. Although it is not realistic to claim that the fairly abstract theoretical concepts of this

research have been perfectly operationalised and measured by the instruments employed, the wide recognition that the particular instruments enjoy from researchers in the field, as well as the results of the item- and factor-analyses run where appropriate to assess the psychometric properties of the particular scales used, provide some assurance of the questionnaire's and the overall study's criterion and construct validity.[1]

Nonetheless, a number of potential limitations associated with the mode of measurement of the variables in the study still need to be noted. To start with, while considerable care was taken to collect valid and reliable data, the measurement of some of the variables identified in the study was somewhat crude and may have influenced the findings. For example, variables such as the standards' attainability, the measures' accuracy, and the managers' motivation were effectively measured through a single questionnaire item in each case, making thereby the assessment of the reliability of these measures difficult. The measurement of managerial job performance - although performed on a more sophisticated and detailed composite scale - may also be deemed as problematic, as simply asking survey participants to rate their overall and role-specific job performance has its own interpretation difficulties (Briers & Hirst, 1990). Respondents had absolute discretion in judging the relative importance of the different dimensions of managerial performance, the standard or benchmark level for assessing performance on each dimension, as well as the time horizon over which the rating was made, a fact that potentially makes the comparability of responses questionable, and the relation of these responses to other variables in the study clearly ambiguous. On a related issue, the use of common method for measuring all variables (i.e., the exclusive reliance on self-report measures) may have led to overstatements of the identified relationships between variables as a result of consistency effects. The 'common-method' problem is associated with the use of a single questionnaire using self-reporting measures and originates in the respondents' tendency to provide 'consistent' and 'socially desirable' answers which may cause the relationships to be overstated or even to be artificial (e.g., Collins, 1978 ; Salancik & Pfeffer, 1977 ; Podsakoff & Organ, 1986). To the extent that such hidden biases and random errors - generally regarded as serious sources of inflated associations between variables in

[1] The idea to include in the questionnaire two alternative measures for every key variable in the study, so that to enable the direct assessment of the criterion validity of the instruments used, was seriously considered. It was nevertheless abandoned for practical reasons, as the length of the questionnaire and the time required to complete it far exceeded the acceptable standards, as these were prescribed both by the participant company and the previous research practice.

questionnaire-based research (Bagozzi et al., 1991) - cannot be systematically controlled for in the present study, particular caution should be exercised in interpreting the obtained results.

Furthermore, the promise for strict response anonymity and confidentiality (considered essential given the nature of the questions asked and the answers required), made impossible to assess directly the presence and significance of non-response bias in the data collection process. Nevertheless, and although non-response bias is not considered to be a serious validity threat in the case of response rates over 30% (Alreck & Settle, 1985) - a percentage comfortably exceeded in this study -, it is worth mentioning that the indirect tests suggested by Oppenheim (1966) and performed here to test for non-response bias (i.e., comparison of the mean scores on the key research variables for early and late responders in the sample of the questionnaires returned[2]) overall showed little evidence of systematic bias from non-response (see Appendix Q).

On a more positive note, the results of the validity and reliability tests carried out and discussed in detail in Chapter 4 (Research Method & Methodology) leave room for some optimism concerning the accuracy of the instrument used to measure the variables in the study. In terms of instrument reliability, although neither test-retest (intraobserver) nor alternate-form reliability could be actually estimated - no access to the initial sample of middle-level managers for the administration of a second questionnaire was granted by the participant company -, the Cronbach alphas (Cronbach, 1951) calculated for the three composite measures employed for the measurement of the managerial performance, the task uncertainty and the external environmental uncertainty variables (0.67, 0.75 and 0.64 respectively) compare favourably with the a-scores reported in previous studies in the literature, and generally argue for sufficient confidence in the inter-item reliability (i.e., internal consistency) of these scales. Nevertheless, the subsequent item and factor analyses - basically performed to examine the homogeneity of the three composite measures - revealed that, in every case without exception, the questionnaire items loaded on at least two (in the cases of managerial performance and external environmental uncertainty on three) factors,

[2] The underlying logic of this indirect method of testing for non-response bias lies in the assumption that non-respondents show a greater similarity to late respondents than to early respondents (Oppenheim, 1966 ; Brownell, 1995). In effect, what is assumed is that if no significant mean score differences exist between the two groups, this would support the contention that no bias from non-response is present in the sample. This alternative, comparison-type, approach is preferred to the method of trying to directly obtain additional information about non-respondents from the organisation and compare it with information on respondents, particularly when the promise of anonymity needs to be kept.

providing conclusive evidence of a lack of unidimensionality of the scales employed. Finally, as far as the face and content validity of the questionnaire is concerned, the consultation with a team of executives from the company at the initial stages of developing the instrument, as well as its subsequent pilot testing first by a small number of academics in the University of Glasgow and later by a larger group of middle-level managers in the company, can be seen to have contributed to the improvement of the overall validity of the questionnaire eventually used for the data-collection purposes of the study.

7.2.4 Reliability

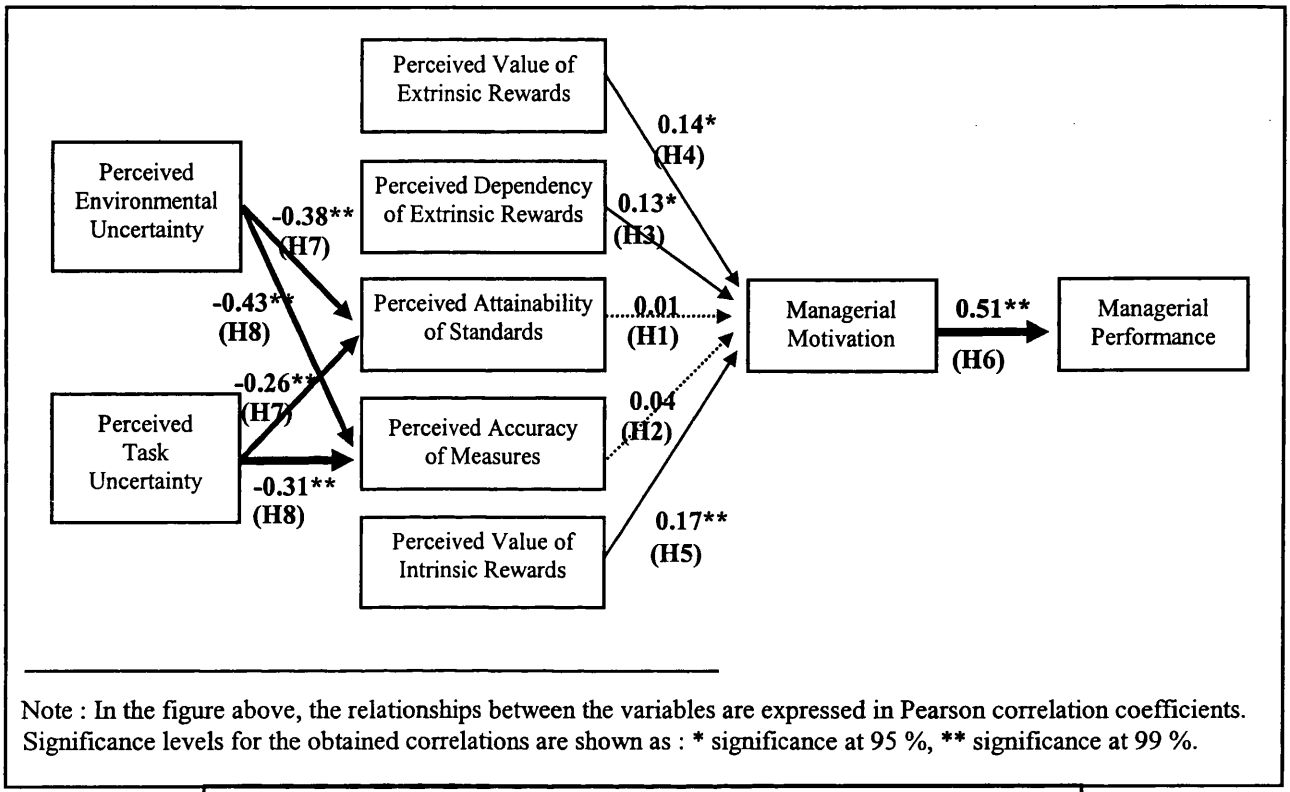
Lastly, the reliability of the study is also considered to be fairly high. The use of a highly structured method for collecting data in a form that is quantitatively analysable, as well as the emphasis on the statistical control over the variables identified in the research, provide a relatively high degree of confidence about the consistency of the results obtained. Overall, mainly owing to the high level of structure and rigour maintained in the stages of data collection and analysis, the present study is regarded as easily replicable for similar research endeavours in the future, and hence as highly reliable.

Overall, the previous sections have gone a long way deconstructing the present study, essentially detailing all of its (actual and potential) weaknesses. Having gone through that, one should not overlook the fact that this is indeed one of the few empirical studies in the area of management control and motivation that has collected *attitudinal data* (perceptions) from *real managers* who were actually operating at the middle level of the organisation's hierarchy. And despite the positivist approach that was employed here in order to analyse the collected data, an attempt was made throughout this research to collect (both in the focus-group discussion and in the forum organised with the participant company) additional, more qualitative data about the organisation's PMERS, data that could provide a different angle on the findings that emerged from the questionnaire survey.

With these in mind, the subsequent sections discuss next the study's main findings and their implications.

7.3 Overview and Discussion of Empirical Findings

In sum, the findings of the study can be diagrammatically depicted as in the figure below.



Note : In the figure above, the relationships between the variables are expressed in Pearson correlation coefficients. Significance levels for the obtained correlations are shown as : * significance at 95 %, ** significance at 99 %.

Figure 7-1 : Diagrammatic Representation of the Study's Findings

On the whole, this study attempted to investigate the motivational role of the PMERS in the organisational setting by effectively exploring the following three main lines of inquiry :

(1) The effect of Managerial Motivation on Managerial Performance

(2) The effect of the PMERS on Managerial Motivation

(3) The effect of Environmental and Task Uncertainty on the PMERS.

The sections that follow seek to summarise the findings of the study in each of these areas of inquiry, and, further, discuss them within the context of the relevant literature that provided the theoretical basis for this research.

7.3.1 Managerial Motivation and Performance

With respect to the relationship between managerial motivation and performance, the results of the study indicated that managers who experience high motivation tend to exhibit not only significantly higher overall job performance but also significantly higher performance in every individual area of their managerial job (i.e., planning, investigating, co-ordinating, evaluating,

supervising, staffing, negotiating, representing, etc.) than managers who experience a comparatively low motivation. This finding is consistent with the theoretical propositions put forward within the expectancy theory of work motivation in general, and the Porter and Lawler (1968) model of job behaviour in particular (the micro-behavioural frame of reference of this research), which both underscore the significant role of motivation in the determination of the individual's performance. According to the expectancy model of human behaviour within organisations, motivation is certainly not the only factor that causes people to perform at different levels. However, although other factors such as the individual's ability (that is, his / her training, experience, talent, and aptitude), his / her understanding of his / her role (i.e., his / her role perception), as well as a number of situational and environmental factors, all have been theorised to exert some influence on the way individuals perform in the organisational setting, motivation still seems to be the single most important determinant of individual job performance (Lawler, 1994).

From a more empirical point of view, the results of this research are in agreement with the findings of numerous studies that have attempted to investigate the behaviour of managers in the field. In the first place, they provide support to the findings of a positive relationship between motivation and performance that have repeatedly been reported in the management accounting and control literature (e.g., Ferris, 1977 ; Rockness, 1977 ; Brownell & McInnes, 1986). Furthermore, they add to the substantial amount of empirical evidence about a positive motivation-performance relationship that can be found in the organisational behaviour literature, and are particularly relevant to studies such as those of Lawler and Porter (1967), Porter and Lawler (1968), Schuster et al. (1971), and Lawler and Suttle (1973), which have been conducted on managerial samples. In a series of extensive literature reviews of the work in this area, Mitchell (1974, 1979, 1982) concludes that the majority of the studies in the field of organisational psychology conclusively demonstrate a positive relationship between motivation and performance, a result that was categorically confirmed in the present study.

7.3.2 PMERS and Managerial Motivation

7.3.2.1 Performance Standards and Motivation

The hypothesised positive relationship between the perceived attainability of standards and the managers' motivation was not confirmed in this research. No evidence was found here to support

the intuitively logical proposition that the standards of performance that are perceived to be more attainable become more 'internalised', and, consequently, result in higher levels of managerial motivation and subsequent performance. *Prima facie*, this finding appears to be at odds with the assertion found in the organisational behaviour literature that the conscious setting of specific, challenging goals - given goal commitment - has a strong positive impact on individual work motivation and performance (Locke & Latham, 1990). It also seems to contradict the large amount of studies in both the management control and the organisational psychology literature that unanimously recommend the setting of challenging but not impossible to attain performance targets in the PMERS for maximum motivation (e.g., Frank, 1959 ; Becker & Green, 1962 ; Locke, 1968 ; Dunbar, 1971 ; Lawler, 1973 ; Hopwood, 1974 ; Porter et al., 1975 ; Sillinglaw, 1982 ; Horngren & Foster, 1987 ; Horngren & Sundem, 1987 ; Otley, 1987b ; Newman et al., 1987 ; Locke et al., 1988 ; Merchant, 1989 ; Emmanuel et al., 1990 ; Simons, 1995 ; Lyne, 1995 ; Drury, 1996).

Empirically speaking, this result contradicts also the findings of a substantial body of empirical research, which has consistently indicated that there is a relationship between motivation and the perceived difficulty of standards. More specifically, this study appears to be inconsistent both with the numerous (mostly experimental) studies in the field of applied organisational psychology (see Locke et al., 1981 and Locke & Latham, 1990 for comprehensive reviews of this literature), as well as with the - more relevant, but less in number - empirical studies in the area of management control (for example, Stedry, 1960 ; Stedry & Kay, 1966 ; Hofstede, 1968 ; Carroll & Tosi, 1973 ; Rockness, 1977 ; Kenis, 1979 ; Chow, 1983 ; Waller & Chow, 1985 ; Hirst & Lowy, 1990 ; Lindquist, 1995) which in their great majority have shown that both the motivation to perform and the subsequent job performance tend to be higher when performance standards are perceived to be demanding (i.e. moderately difficult) yet attainable.

A possible explanation for this unexpected result, that clearly contradicts "...one of the most robust and replicable findings in the psychological literature" (Locke et al., 1981, p. 145), may lie in the synchronous effect of other contextual factors, which have been either found or theorised to play together with the setting of challenging goals equally significant roles in the performance evaluation context. Flamholtz (1983) rightly argues that the target setting system is not a system in itself, but rather comprises only one part of the company's overall control package,

and therefore its effect on the manager's behaviour cannot and should not be examined in isolation from other critical PMERS-related issues such as the measurement and evaluation of managerial performance, the system of allocating financial and other rewards, or the organisation's structure. The failure to examine in the present study the whole range of the complementary and compensating relationships among these various control system elements as they are interacting within the organisation's wider control context may potentially explain the inability to confirm empirically the importance of the standard setting function - or, as discussed in the following section, the importance of the performance measurement function - of the PMERS on the manager's motivation and subsequent performance.

7.3.2.2 Performance Measures and Motivation

The hypothesis about the positive relationship between the managers' motivation and their perception about the accuracy of measures was not supported in this study either. Essentially, the statistical analysis conducted showed that the managers' perception about how accurate the performance measures are was not related in any way with the managers' motivation. Again, this finding is in contrast to the prescriptions found in both the management control and the related organisational psychology literature about the need to employ accurate performance measures within the PMERS if they are to have any discernible positive effect on the managers' motivation (e.g., Dalton, 1971 ; Porter et al., 1975 ; Lawler, 1976 ; Lawler & Rhode, 1976 ; Ivancevich et al., 1977 ; Horngren, 1982 ; Magee, 1986 ; Merchant, 1989 ; Emmanuel et al., 1990 ; Simons, 1995).

The inability to diagnose any kind of relationship between the managers' perceptions about the accuracy of the measures used within the PMERS and their job behaviour (i.e., their motivation and subsequent performance) is also problematic on the empirical level, as it is at variance with the case evidence provided by the early behavioural management control research. Empirical studies such as those of Argyris (1952), Hofstede (1968), Likert and Seashore (1968), Lowe and Shaw (1968), Schiff and Lewin (1968), Hopwood (1972, 1973), Onsi (1973) and Kenis (1979) have uniformly concluded that both the perceived technical imperfections of the performance measures employed, as well as the way these measures are used within the PMERS, have various negative psychological consequences on managers' individual and social behaviour such as resentment and deterioration in interpersonal relationships with supervisors and peers, increased job-related tension, frustration, social withdrawal and apathy, absenteeism, anxiety, stress, fear of

failure and dissatisfaction with the job, which eventually can influence adversely managerial motivation and effectiveness or even lead to dysfunctional behaviour in the form of invalid data reporting and dysfunctional decision making. Contrary to these findings, the analysis conducted in the present study failed to reveal any significant relationship between the perceived inadequacies of the performance measures used and the managers' motivation and performance.

Two critical observations need to be made with regard to this result. First, it has to be noted that in the present study no attempt was made to distinguish, measure, and examine as a separate variable what is termed in the management control literature "style of use" (of the PMERS). Yet most of the research into the behavioural effects of management control systems has, implicitly or explicitly, recognised that the effect of performance measures in the evaluation situation depends not only on the measures' technical characteristics but also on the *extent* and *manner* in which supervisors use them (Briers & Hirst, 1990). Thus, it is possible that the failure to consider, measure and examine differences in the *way* the PMERS is used is the underlying reason - or one of the reasons - why the hypothesised effect of the PMERS on managerial motivation was not confirmed in this study. In essence, one significant explanatory factor has been omitted here, one that could potentially account - either independently, or interactively with the independent variable identified in the study (i.e., the perceived accuracy of measures) - for a large portion of the variation in managers' motivation and performance.

A second point worth making with respect to the analysis conducted in the present study, is that it exclusively concentrated on the effect of the PMERS on the two main behavioural variables prescribed by the expectancy-theory framework adopted in this research, that is, managerial motivation and performance. However, this research choice to 'reduce' the complex concept of managerial behaviour into the - much easier to measure and quantify - dependent variables of motivation and performance, has admittedly restricted somewhat the depth and breadth of the investigation into the behavioural outcomes of the performance measurement and evaluation process. Prior empirical work in the area of management control has shown that, apart from their potential impact on motivation and performance, systems of performance measures and related reward schemes can under certain circumstances give rise to a wide range of worth examining behavioural responses from individuals in the organisational setting. Managers engaging in dysfunctional bureaucratic behaviour to influence the performance measures (e.g., Berliner, 1961 ;

Dearden, 1961, 1962, 1969 ; Simons & Weston, 1990 ; Yin, 1992), withholding data or alternatively transmitting invalid or misleading data about their planned or / and actual performance (e.g., Read, 1959 ; Dalton, 1959 ; Tannenbaum, 1962 ; Williamson, 1964 ; Argyris, 1964, 1971 ; Mumford & Banks, 1967 ; Pettigrew, 1970, 1972, 1973 ; Umapathy, 1987), or even tampering with the performance measures themselves (e.g., Keller, 1989) in order to attain a favourable performance evaluation, are commonly cited examples of such behavioural responses to the PMERS, which, with the given emphasis on managerial motivation and performance, were not considered in the present study.

7.3.2.3 Organisational Rewards and Motivation

As far as the effect of organisational rewards on the managers' motivation is concerned, this study provided evidence to support the theoretical predictions that managers

i) who value highly the extrinsic rewards they receive through the company's PMERS,

ii) who perceive these extrinsic rewards they receive within the company's PMERS as performance-dependent,

iii) who value highly the intrinsic rewards that are associated with their job in the organisation,

tend to experience a significantly higher level of motivation than those managers who do not. Again, these findings are in line with the basic tenet of expectancy theory of motivation which emphasises the important role of (both extrinsic and intrinsic) rewards in the determination of work motivation, asserting that people within organisations will be motivated to perform an action only when they believe that this action will actually provide them with rewards / outcomes that they themselves need and, therefore, value (Vroom, 1964). There are also consistent with the prescriptions in the management control literature (e.g., Ronen & Livingstone, 1975 ; Porter et al., 1975 ; Kopelman & Reinharth, 1982 ; Merchant, 1989) about the importance of incorporating in the PMERS rewards which are, first, sufficiently valuable (attractive) to the managers they are supposed to motivate, and, second, performance-dependent, i.e., administered on the basis of the managers' individual performance within the PMERS, as well as with the relevant normative implications of "agency theory" (see, for example, Demski & Feltham, 1978 ; Holmstrom, 1979).

From an empirical point of view, the study's results are in general terms supportive of the evidence found in the relevant literature. More specifically, the positive relationship between managerial motivation and the perceived dependency of rewards found here is in accordance with

a considerable amount of correlational studies in the field of applied organisational psychology which have demonstrated that the more a manager believes that his / her job performance influences the organisational rewards (pay, as well as other) that he / she receives, the more motivated and effective he / she is in his / her job (see, for instance, Lawler, 1966 ; Lawler & Porter, 1967 ; Porter & Lawler, 1968 ; Gavin, 1970 ; Schuster et al., 1971 ; Wofford, 1971 ; Lawler & Suttle, 1973). The hypothesis that when an individual's rewards are seen as effectively tied to his / her performance along certain criteria, his / her behaviour will be guided by the desire to optimise performance with respect to those criteria has been consistently supported also by a large number of experimental studies as well (e.g., Locke et al., 1968 ; Graen, 1969 ; Jorgenson et al., 1973 ; Pritchard & DeLeo, 1973 ; Pritchard & Curts, 1973 ; Terborg & Miller, 1978), although one should consider these findings with caution as they come from studies most usually conducted in settings and with samples that bear little or no resemblance to managers. Overall however, the findings of this study appear to be consistent with the general conclusion reached by the great majority of the empirical studies in the field of organisational psychology (see Campbell & Pritchard (1976) for a review of this literature), that the individual's motivation is positively related to his / her perception about the performance-dependency of the rewards that he / she receives. They are also in line with the empirical research in the area of management control on the effects of standard-based incentives on managers (see, for instance, Rockness, 1977; Chow, 1983 ; Waller & Chow, 1985 ; Dillard & Fisher, 1990 ; Kren, 1990) and on lower-level employees (for thorough reviews of this somewhat dated literature, see Viteles (1953) and Marriott (1957)) which has uniformly concluded that performance-related incentive plans tend to increase individual motivation and performance.

With reference to the positive association identified between the managers' perception about how valuable the (extrinsic and intrinsic) rewards associated with their job are and their level of motivation, the present study seems to be in agreement with Campbell and Pritchard who, after carefully reviewing the relevant literature, concluded that it would be unwise to underestimate the effect of the anticipated value of reward on motivation, particularly since "...the literature in experimental psychology is quite clear in showing the significant influence of reward magnitude on subsequent behavior" (1976, p. 87). On the whole, however, the research results obtained here as to the valence of reward-motivation relationship appear to confirm some of the previous empirical studies in the field of organisational psychology (see, for example, Porter & Lawler,

1968 ; Pritchard & Sanders, 1973 ; Pecotich & Churchill, 1981 ; Nakanishi, 1989), while contradicting some others that have identified very weak positive (e.g., Hackman & Porter, 1968) or even negative correlations among these two variables (e.g., Jorgenson et al., 1973).

Specifically with regard to the motivational effect of intrinsic rewards, the results of this study lend support to the theoretical models of Porter and Lawler (1968), Ronen and Livingstone (1975) and Jiambalvo (1979), which all postulate the parallel existence of and the explicit dichotomisation between extrinsic and intrinsic rewards in the work setting in general, and in the performance evaluation situation in particular. Although the secondary statistical analysis conducted here indicated - in agreement with Ewen et al. (1966), Graen (1969), Mitchell and Albright (1972), House and Wahba (1972), and Turney (1974) - that the valence of intrinsic rewards has a relatively stronger relationship with, and a relatively greater impact on motivation than the valence of extrinsic rewards, it has to be noted that both variables were found to be significantly correlated with motivation and subsequent performance. In addition, the finding that the great majority of the managers in the sample examined were shown to be motivated both by the extrinsic and the intrinsic rewards that were available to them in their work environment - more accurately, by *different combinations* of these extrinsic and intrinsic rewards available -, suggests a complementary role of extrinsic and intrinsic rewards in the motivation of middle-level managers. Clearly, this last result contradicts the arguments and the pertinent empirical evidence presented by the proponents of the cognitive evaluation theory (see, for instance, Deci, 1971, 1972 ; Lepper et al., 1973 ; Calder & Staw, 1975 ; Notz, 1975 ; Condry, 1977 ; Lepper & Greene, 1978 ; Deci & Ryan, 1980, 1987) that these two types of motivators are antagonistic *per se*, as well as the theoretical position taken by Herzberg (1966, 1968) that only intrinsic job factors should be viewed as motivators. Indeed, it is much closer to the theoretical assertions of Barnard (1938), Mahoney (1964), and Etzioni (1988) who maintain that the extrinsic incentives provided by outer sources (the organisation, the supervisor, etc.) and the powerful social and moral forces embedded in every individual (such as the sense of duty, the sense of identity, the feeling of self-worth, and the need for self-actualisation) are best seen as complimenting each other in determining the motivation of most human beings.

7.3.3 Environmental Uncertainty and PMERS

The contingency hypotheses, examining the impact of the perceived environmental uncertainty on

the managers' perceptions about the accuracy of the performance measures and the attainability of performance standards, were unambiguously confirmed in the present study. In essence, the analysis conducted indicated that the perceived degree of accuracy of the measures, as well as the perceived degree of attainability of the standards employed within the PMERS is related to the manager's perception of how uncertain his / her internal and external environment is ; managers operating in environments of high uncertainty tend to perceive the performance measures as less accurate and the performance standards as less attainable than managers who are operating in environments of relatively lower uncertainty. This result is in line with the theoretical propositions of the proponents of the 'environment-evaluation system contingency' school of thought within the management control literature (e.g., Khandwalla, 1972 ; Gordon & Miller, 1976 ; Hayes, 1977 ; Amigioni, 1978 ; Waterhouse & Tiessen, 1978 ; Otley, 1978 ; Ewusi-Mensah, 1981 ; Hirst, 1981 ; Gordon & Narayanan, 1984 ; Govindarajan, 1984 ; Chenhall & Morris, 1986 ; Brownell, 1985 ; Merchant, 1990 ; Emmanuel et al., 1990 ; Ross, 1995 ; Hartmann, 1997), who hypothesise a significant effect of environmental uncertainty on the PMERS : In environmental conditions of high uncertainty, where the ability of the organisation to predict future circumstances and make decisions about activities in advance of their execution is necessarily limited (Galbraith, 1977 ; Govindarajan, 1984) and the perceived knowledge about cause-effect relationships is - by definition - incomplete (Thompson, 1967), the volume and frequency of non-programmed decision making is expected to be high (Emmanuel et al., 1990), the extent of task and process interdependency broad (Hirst, 1981), and the scope for task and procedure specification and standardisation narrow (Waterhouse & Tiessen, 1978). Under these circumstances, the - comparatively simpler in more predictable environments - task of providing perceived unambiguous, *a priori* performance targets, as well as relevant measures that can accurately reflect and evaluate *ex-post* managerial performance, is a formidable project to carry out.

Regrettably, as noted in the literature review presented in Chapter 2, there is a lack of empirical studies examining the direct effect of environmental uncertainty on the perceived characteristics of the PMERS, which clearly makes the comparison of this study's findings with the existing body of empirical work in the area of management control somewhat problematic. In the only research endeavour to the author's knowledge that the effect of uncertainty on managerial perceptions about the PMERS was specifically examined, Hayes (1977) concluded, in a manner consistent with this

study, that the same performance measures, while perceived as appropriate by managers operating in low-uncertainty environments, they were deemed as much less appropriate (even totally inappropriate) by managers operating under more uncertain environmental conditions.

In contrast to the present study, however, the majority of the empirical studies available treat environmental uncertainty as a moderator variable (i.e., as a variable that is theorised to affect (moderate) the relationship between the PMERS and the manager's motivation or / and performance), and not as an independent variable directly affecting some critical intermediate PMERS-related perceptions, which in turn are seen as determining managerial motivation and performance. If we would like, nevertheless, to place the results of this research in the context of the existing empirical literature, these appear to be in line with a considerable number of empirical studies (e.g., Merchant, 1984 ; Brownell, 1985 ; Brownell & Hirst, 1986 ; Imoisili, 1985, 1989 ; Brownell & Dunk, 1991 ; Lau et al., 1995 ; Ross, 1995) which have failed to provide supportive evidence to the theoretical propositions and empirical findings of Otley (1978), Hirst (1981, 1983), Brownell (1987), Govindarajan (1984, 1988) and Mia and Chenhall (1994) about a significant two-way interaction between environmental uncertainty and the PMERS affecting both managerial performance as well as job-related tension.

7.4 Implications of the Findings

7.4.1 Implications for Practice

7.4.1.1 The Importance of Motivation

A number of authors in the area of management control argue that, particularly in the context of the contemporary multidivisional decentralised company, the overall effectiveness and eventual survival of the organisation passes through the individual motivation and subsequent performance of managers operating at the middle level of the organisation's hierarchy (e.g., Donaldson, 1984 ; Merchant, 1989 ; Emmanuel et al., 1990). Merchant (1989) goes a step further to suggest that in the multidivisional decentralised setting, where the critical distance between the organisation's top- and lower-level management and the consequent information asymmetry makes the direct monitoring and control of the actions of middle-level managers expensive and, occasionally, infeasible, the increase of the manager's effectiveness is strictly connected with his / her motivation.

This study provided conclusive evidence about a significant strong positive relationship between the manager's motivation and his / her performance. This finding comes to confirm the propositions of many theorists in the field of organisational psychology and in that of human resource management (see, for instance, Lawler (1994) or Buchanan & Huczynski (1997)) who maintain that, although job performance is clearly affected by a wide variety of idiosyncratic factors (such as the individual's abilities, skills, and personal traits) and environmental parameters (i.e., situational variables such as the size, structure and culture of the organisation, the management, control, and leadership systems and styles within the organisation, etc.), the individual's motivation - that is, the amount of effort (energy) he / she is willing to put into his / her job - has a very significant impact on his / her subsequent job performance, and warrants, therefore, special attention and consideration. Hence, one of the central lines of argument that the present study puts forward is that, given the ever-tightening constrains placed on contemporary organisations by a highly competitive and rapidly changing environment, the understanding and management of the complex phenomenon - more accurately in expectancy-theory terms, of the process - of motivation, can provide the organisation with additional tools and processes to increase its level of organisational effectiveness - particularly so in the context of the increasingly critical middle management level where, unavoidably, managerial control and motivation are almost indiscernible concepts.

7.4.1.2 On the Determination of Motivation : Individual Perception versus Objective Reality

The evidence from this study clearly support the view that the individual's behaviour is primarily shaped by the individual's own perception of the reality in which he / she exists and operates, rather than by the actual objective reality itself. Indeed, the present research indicated that the manager's motivation and subsequent performance were significantly related to a number of managerial perceptions about the system that measured, evaluated, and rewarded his / her performance, as well as about the uncertainty of the environment in which he / she was working - in essence, offering support to Nadler's and Lawler's (1977) argument that "...it is the perceptions of people that basically determine their motivation, not reality" (p. 32).

In the particular context of managerial performance evaluation and reward, the implication of the above finding is that the actual effectiveness of the PMERS to motivate the organisationally desirable behaviour lies not as much on the objective technical characteristics of the system itself,

but rather on the *perceived* characteristics of the system as these are realised by those the system is expected to motivate. If we accept that control is fundamentally a behavioural issue, and that the ultimate criterion by which any system of control (such as the PMERS) should be assessed is behavioural (Emmanuel et al., 1990) - i.e., to what degree does such a system succeed in influencing managers to behave in desirable ways -, then we ought to change our focus of attention from the objective properties of the control system to the way these properties are individually and subjectively interpreted (perceived) by the managers subject to this system. Of course, it is self-evident that in the formation of these critical - from a motivation point of view - managerial perceptions about the PMERS (for instance, about how attainable the performance standards are, how accurate the performance measures are, or how valuable and performance-related the rewards are) both the actual technical design of the system and the way in which the PMERS is used play a decisive role, - perhaps just as decisive as the individual's personality, prior experiences, and preferences. In the final analysis, however, as Porter et al. (1975) consider, what actually exists does not really matter as far as the motivation of managers is concerned ; essentially, managers respond to what they think it exists, to use Weick's (1969) terminology, they respond to their own individually "enacted" (perceived) PMERS rather than to the "objective" PMERS.

The above notion is implicitly recognised in the management control literature, although one should mention that when it comes to empirically investigating the behavioural effects of the PMERS on organisational members, most researchers tend to overlook such critical intermediate psychological stages (e.g., perceptions, beliefs, attitudes, etc.) and basically hypothesise and test direct relationships between objective, presumably pivotal, PMERS characteristics and human behaviour. One of the main contentions of the present study, however, is that such psychological angles cannot be disregarded either by the researchers in the field who want to gain a deeper understanding of the why and how the PMERS impacts on the individual's motivation and performance, or by the practitioners responsible for the design and implementation of PMERSs that can effectively fulfil their motivational role and potential.

7.4.1.3 The Design and Management of the Company's Reward System : Motivational Considerations

The conviction that the allocation of rewards by organisations to managers differentially - on the basis of their evaluated performance - can have a strong motivational effect on the managers'

motivation and subsequent performance is widespread in the management control literature (e.g., Merchant, 1989 ; Emmanuel et al., 1990 ; Simons, 1995 ; Drury, 1996). The significance of rewards in the process of motivation is also captured by expectancy theory, whose basic postulate with regard to the motivational function of rewards is that individuals within organisations will be motivated to perform at higher levels in their job if they believe that they will receive valued rewards that are contingent on their individual job performance (Corbo & Kleiner, 1991). This central proposition was empirically tested in the present study and, as mentioned earlier, was fully confirmed :

Managers who

i) valued highly the rewards that were administered to them by the company's PMERS,

ii) perceived these rewards as being administered in relation to their individual PMERS-evaluated performance,

were found to experience a significantly higher level of motivation than those managers who did not.

In addition, secondary analysis conducted on the managers' reward preferences provided supporting empirical evidence to show that

iii) apart from the perceived value of the extrinsic rewards, the value the managers attached on the intrinsic factors associated with their jobs in the organisation had an equally significant impact and relationship with their motivation,

iv) the great majority of managers appeared to be motivated both by the extrinsic and the intrinsic rewards that were available to them,

v) the managers in the sample showed significantly different preferences for the various (extrinsic and / or intrinsic) rewards they perceived to receive in the context of their job in the organisation.

On the whole, the findings of the study seem to indicate that, from a motivational point of view, the design and management of the company's reward system revolves around the two principal questions addressed in the following sections :

- What rewards will be administered ?
- How will these rewards be administered ?

What rewards will be administered ?

With regard to the first question, if we accept as our starting point that the motivational influence of any reward comes about only as a result of the value the *receiver* places on it, it makes sense to suggest that a motivationally effective PMERS should be offering the rewards which are widely desired (valued) by its particular managerial staff. To the extent, however, that the perceived value and the consequent motivational impact of each of the various reward forms available, as this study showed, vary substantially and in meaningful ways among individuals - and, more likely than not, will not remain static for the whole of the manager's life in the company (Porter et al., 1975) -, the task of designing a reward package which offers rewards that are diachronically valuable to and, thereby, motivationally effective for every single manager in the organisation becomes insurmountable.

The key point here is to recognise that different people have different needs and are therefore likely to desire, value, and be motivated by different rewards. While some managers may assign high importance to extrinsically administered rewards such as monetary incentives, promotion, or fringe benefits, others may be more interested in more subtle aspects of their job, inherently rewarding in themselves, such as the opportunity to do an interesting and challenging work, the verbal recognition for a job well done, or the sense of accomplishment that follows from having carried through a difficult task successfully. Indeed, this was clearly demonstrated in the present research where it was revealed that, although the manager's motivation was in most cases triggered both by the perceived value of the extrinsic rewards administered to him / her and by the perceived value of the intrinsic factors associated with his / her job in the organisation, different managers tended to assign a high value to - and be motivated by - different (extrinsic and / or intrinsic) rewards. In this sense, the motivational effectiveness of the PMERS becomes more than anything else a matter of the system's ability to recognise both the individual differences factor as well as the dynamics in people's needs and preferences over time, and accommodate them appropriately.

Practically speaking, the latter implies that the typical reward system design needs to be expanded so as to be able to respond to the different individual needs and reward preferences of the company's managers - in other words, be re-engineered so that it can 'fit' the motivational profile of each individual manager in the organisation. One way to do this is to complement the

company's formal reward system with a process that will, first, identify - rather than *assume* - the managers' personal needs and tastes, and then provide the rewards each manager desires at the lowest possible cost. Within this context, the systematic measurement of the managers' reward attitudes - either through some structured or semi-structured data collection method (a questionnaire, a personal interview, etc.), or through the direct observation of the managers' responses to different situations and / or rewards - is deemed necessary, and can provide both top management and the designers of the company's reward package the with a potential tool to confirm their assumptions about which rewards motivate, or will motivate, various groups and individuals in the work place. If the manager is identified by the system as one who values more extrinsic forms of rewards such as salary raises, year-end bonuses, and promotion, then the PMERS should aim to motivate him / her by offering such type of rewards. In the case of a manager who is seen as being driven by rewards of a more intrinsic nature such as feelings of achievement, recognition, and self-actualisation, the emphasis should be on the continuous enrichment and enlargement of the context of the manager's job, for he / she is likely to respond well to and be motivated by such things as increased autonomy and responsibility, challenging and varied work, and meaningful performance feedback. In the final analysis, however, what needs to be stressed here is that with respect to what is valuable and motivating for people, companies need not and should not assume and generalised - particularly without sufficient evidence. Russell and Black's (1972) assertion about the three fundamental principles underlying human motivation - "people are different ; people are different ; and people are different" (p.160) - is somewhat simplistic, but nevertheless needs to be taken seriously. The bottom line is that if organisations can tailor their reward packages to their managers' individual preferences, they can provide meaningful, and thus effective in motivating performance, rewards at the lowest possible cost (Merchant, 1989) ; failure to do so is likely to lead them trying - with low chances of success - to motivate their managerial staff with rewards they (the managers) do not value, that is, rewards that are costly, and from a motivational point of view, irrelevant. Of course it is unrealistic to suggest the complete 'individualisation' of the company's reward system, because - to the extent that each person is virtually unique in his / her needs and preferences - this would ideally demand that a unique reward package be created for each of the company's managers. What is more, since people's needs and tastes are continually changing and developing, true 'individualisation' would require that the reward package of each manager be constantly changing. Instead, another - more practical and cost-effective - way to arrive at a good individual / reward package fit is to build

within the company's formal reward system the opportunity for managers to make their own choices about the kind of rewards they themselves value and want from a range of rewards available to them, rather than oblige them to take - the most usually expensive but often unwanted- rewards which are universally provided by the organisation to everyone (Nadler & Lawler, 1977).

The above prescription draws parallels with the "compensation cafeteria" approach put forward by Hettenhouse (1971), an approach that essentially refers to a reward system within which the choice of reward mix is placed in the hands of the individual whose performance the rewards aim to motivate - in our case, the middle-level manager. Although Hettenhouse (1971) proposes the "compensation cafeteria" system with top-level executives in mind, there is practically no reason why it can not be implemented at lower levels of the organisation's hierarchy ; the underlying logic of this alternative approach stems from the realisation that managers of different age, marital status, and educational background, and within different personal, family, and tax circumstances, most probably have different needs for cash and other rewards, and therefore should be offered options as to the forms in which they receive their compensation. To do this, companies must first, on the basis of a cost / benefit analysis (Hettenhouse, 1970) and after examining the managerial attitudes towards the different rewards available, develop a 'menu' of alternative payment packages. These alternative packages - choices in the company's reward menu -, if designed carefully will not vary significantly in cost from the company's point of view, and at the same time can have an enhanced motivational value in the eyes of the recipient manager who will be able to make his own personal choice among current or deferred, cash or equity, extrinsic or intrinsic rewards, from the compensation packages available.[3] In essence, what Hettenhouse (1971) proposes is a contingency approach to the design and choice of the company's reward system, contingent upon the individual preferences and personal circumstances of the company's managers.

As to the popular question of whether the company should concentrate on administering valuable extrinsic rewards or, rather, on fostering intrinsically motivational work situations in order to

[3] Indeed, a number of companies have recently realised the potential motivational benefits of reward systems that incorporate by design the element of choice for employees, and have attempted to put such systems in practice. Royal Bank of Scotland's RBSelect that was launched in October 1998, a total reward benefits package which gives employees a wide choice of benefits and almost complete flexibility in how they allocate the overall value of their remuneration package, is representative of such attempts (Blackman, 1999).

maximise its managers' motivational force, this study provided evidence to show that the majority of the managers are basically motivated both by the extrinsic and the intrinsic rewards that they see evident in their job environment. In light of this evidence, it appears that there are multiple and differing motivational drivers affecting human behaviour (Herzberg et al., 1959), which essentially complement each other and combine in determining the individual's motivation and subsequent performance. Thus, particularly in the managerial setting where apart from the always readily available extrinsic rewards (e.g., monetary incentives, promotion, fringe benefits, etc.) a number of intrinsic motivators - such as chances for achievement and self-fulfilment, for competence and self-determination, and opportunities for increased power, decision autonomy, status, recognition and self-esteem - come into play, organisations are obviously better-off trying to motivate their managers both through extrinsic and intrinsic avenues. Extrinsically this can be attained through the identification and allocation of valuable rewards to the company's managers in the way prescribed in the previous paragraphs. Increasing the manager's motivation intrinsically is somewhat more complicated as it basically calls for a restructuring of the manager's job environment with the intention to increase the inherent value of the tasks and activities the manager carries out daily in the context of his / her job (Berry & Houston, 1993). One way to enrich a manager's job is to enlarge it horizontally, i.e., to include a number of different work activities so that to reduce the repetition and increase the variety and challenge of the tasks performed in the job, making it thereby much more interesting and worthwhile. The manager's job can also be enlarged vertically, that is, by allowing the manager to take more responsibility for and control over his / her work, by allowing him / her the authority to make important decisions, or even participate in the planning of how the job should be carried out. On the whole, both the horizontal and the vertical redesign of the manager's work can make the everyday tasks and activities he / she performs more interesting and challenging, and increase in them the opportunities for responsibility and achievement, thereby enhancing their intrinsic motivational potential. Furthermore, if this is supported by management control systems and leadership styles that promote a climate of reward equity, recognition for worthwhile accomplishment, and positive performance feedback, then the possibilities of creating the ideal job conditions within which the manager can experience personal growth, high self-esteem, and, hence, intrinsic motivation are considerable.

How will the rewards be administered ?

As far as the second question is concerned, the results of the present study indicated that the motivational effectiveness of any given set of rewards, apart from their perceived attractiveness, depends also on the managers' perception about whether or not these rewards are tied to the performance they (the rewards) are intended to motivate. In this sense, it appears that the offering of rewards by the organisation acquires additional motivational properties to urge managers towards effective performance, the more the managers perceive that the only way to obtain the rewards offered is by attaining the organisationally required level of performance upon which these rewards are contingent. The obvious implication is that, from a motivational point of view, the better the PMERS succeeds in establishing and reinforcing the manager's belief that the rewards available are administered on the basis of his / her evaluated performance, the more likely it is to have a significant positive impact on the manager's motivation.

This last realisation carries a number of practical recommendations for the design of the company's reward system, all of them presumably aiming at strengthening the manager's perception that there is a direct link between his / her evaluated performance and the rewards he / she receives. First and foremost, the rewards administered by the system should be, to the extent possible, performance-dependent. As Lawler (1971) points out, the obvious means of creating the perception that rewards are tied to performance is, first, to actually relate the rewards closely to job performance and, second, to make this relationship as visible as possible. At the outset, then, the PMERS needs to be designed to allocate the available rewards differentially, on the basis of the individual manager's performance as compared to some predefined objective or standard. In essence, this calls for a system of reward equity within which the differences in the managers' performance are reflected and recognised clearly, and good performers end up been awarded more - and more desired - rewards than poor performers are. Reward equity, however, should not be confused with a system of inconsequent reward equality, where all managers are rewarded equally with no regard to their performance. Such a system of equality, that fails to differentiate clearly and reward proportionately good and poor performance and rewards all people the same, is more likely to undermine its motivational potential, encouraging, at best, only average performance levels (Nadler & Lawler, 1977). On the one hand, it is expected to discourage, frustrate, and eventually demotivate the high-performing managers who see themselves, in spite of their high performance, receiving the same level of rewards with their low-performing peers,

whereas, on the other hand, it is more likely than not to strengthen the behaviour of average- and poor-performing managers through the positive reinforcement of the rewards offered. In contrast, a merit-based reward plan that distributes the organisational rewards available on the basis of attained performance stands a much better chance to be seen by the company's managers as fair (equitable), and to positively influence and direct their motivation.[4]

Having a differential reward system that is based upon merit is certainly a necessary condition for the establishment of the motivationally critical perception that reward depends on individual performance ; however, it is not a sufficient condition for it. Equally - if not more - decisive for establishing a perceived close performance-reward connection is also the openness of the company's reward system. Stated differently, unless the managers in question are informed and aware themselves of the way in which rewards and performance are related within the system, no

[4] In practice, it seems that the use of performance-dependent rewards has gained some momentum in the last two decades. In the U.K., there has been an increasing trend during the late 1980s to include a performance-related element into the remuneration package of middle-level managers (Murlis, 1988). For example, the Incomes Data Service reported that in June 1988, 50% of manufacturing organisations and 40% of service organisations had some form of performance-related pay scheme - although some of these schemes applied at the most senior managerial levels only, and others only to shop floor employees (Emmanuel et al., 1990). A study by Vernon-Harcourt (1987) of 155 U.K. companies found that performance-related bonuses were available to over 80% of directors and to over 70% of senior managers. Similar trends are also evident in the U.S. and in Canada. A survey by the Conference Board revealed that 92% of the manufacturing firms in the United States had annual pay-for-performance incentive plans for their managers (Tharp, 1986). In a similar survey in the Canadian context (Compensation Planning Outlook 1984), 91% of the respondents answered affirmatively when asked : "do you link pay or increases to performance ?" (Luce, 1983). Other studies that have been conducted in a U.S. context also provide evidence that confirms this intention on the behalf of the companies to tie rewards to individual performance. For instance, Vancil (1979) discovered that 90% of his sample of 317 profit-centre managers received annual bonuses, while somewhat later, Merchant (1989) found that all 12 firms that he studied promised profit-centre managers annual bonuses on the basis of their performance. A more recent salary survey by Curtis (1998) revealed that at least one out of two middle managers surveyed received a performance-related bonus ; a slightly smaller percentage (almost 40%) were found to be on a profit-share scheme. Similar conclusions come from Kaplan (1982), who reports that more than 90% of the top managers of decentralised profit centres in large U.S. corporations are eligible for an annual performance-related bonus. Notwithstanding this general trend, comparative, cross-cultural studies indicate that performance-based reward systems differ among different countries. For example, Pennings (1993), based on data from over 200 firms, concluded that bonus payment schemes at the managerial level are much more explicit, much bigger and more variable in the U.S., as compared with those in Europe - although this tendency was found to be more pronounced in certain industries. Other studies comparing U.S. and Japanese management reward practices show that bonus payments and salary increases in Japan are less likely to vary sharply, particularly when compared with U.S. samples (e.g., Bass & Burger, 1979) ; in the Japanese context, even more than in European countries, other factors such as seniority and long-term attachment to the firm are the basis of merit. Clearly, the concept of performance-related reward, although it is becoming increasingly popular, does not yet constitute a universal compensation culture. In another recent trend in the area of managerial compensation highlighted in the literature, the increasing implementation of market-based reward schemes is noted - a trend that basically reflects a conscious effort to align more closely the interests of managers with those of shareholders. According to Johnson (1999), stock options have become the primary long-term incentive device used in the U.S., in Western Europe, and increasingly in other parts of the world. Rappaport (1999), for example, reports that stock options account today for about 30% of the total pay that managers at the middle management level of the largest U.S. companies receive.

positive effect should be expected on their motivation. After all, as the present study showed, it is the manager's *perception* of the PMERS's characteristics (in this case, his / her perception about the performance-dependency of the rewards that he / she receives) and not the actual reality of these characteristics that determine the manager's motivation and subsequent performance. Making therefore performance-related reward information public so that all managers identify a strong connection between high performance and high reward is, from a motivation point of view, at least as important as actually having a merit-based reward system in operation (Lawler, 1981).

In this sense, the results of this research strongly support the case for a fully disclosed performance-based reward plan. From a motivational perspective, it is generally hard to argue with the idea of letting individual managers know what are the rewards available and how they are distributed within the PMERS. This is precisely the kind of information individuals need in order to understand how they are treated by the performance-based reward system, and to establish the motivationally crucial belief that the available rewards are obtainable from good performance. Research suggests that one of the effects of keeping the rewards individuals receive secret is to reduce the ability of these rewards to motivate (Lawler, 1965 ; Lawler, 1967). The argument that has been mainly presented against reward secrecy is that it makes accurate reward comparisons among employees impossible, wiping out, as such, much of the motivational force of the differential reward system that may actually be in place (Porter et al., 1975). The practice of reward secrecy then makes it more difficult to conclusively and visibly establish that good performance and high reward are related in the organisation, and therefore, at least on a prima facie basis, it is to be avoided.

In effect, openly communicating reward information can help enhance the PMERS's credibility and develop faith and trust in the fact that rewards and performance are actually related within the company's formal system of performance evaluation and reward. Just as it is the case with every other system of management control and motivation, a high level of trust on the part of those subject to the system is required in order for a performance-based reward system to work. In the absence of trust, there is a high likelihood that individuals will either not respond to the reward system (loss of motivation), or that they will respond to it in a dysfunctional, counterproductive manner, possibly bargaining for lower performance standards or, in extreme cases, attempting to 'cheat' the system (Lawler, 1981). Needless to say here, that making the

reward-plan information widely known within the organisation will not itself establish the all-important belief that rewards are based upon merit, unless of course the administration of the organisational rewards available is in fact related to the individuals' actual performance. To the extent that this condition does not exist, revealing reward information will only serve to emphasise even more dramatically that the organisational rewards are not tied to performance, thereby further reducing the power of these rewards to motivate (Porter et al., 1975).

It is important to note at this point that the necessary precondition for performance-dependent reward is that individual performance can be assessed accurately and equitably before it is rewarded, and although this may be relatively easier for simple repetitive tasks, when it comes to the evaluation of managerial performance at an individual level, things become more complicated. Particularly in the case of managerial jobs that are performed within highly uncertain and unpredictable environmental conditions, the high level of complexity and task interdependence, as well as the subsequent difficulty in developing reliable, valid and controllable performance assessment tools in practice, makes both the design of performance-contingent reward plans and their implementation problematic (see the following section for a discussion on the impact of environmental uncertainty on the design of the PMERS). In such circumstances, the measures of managerial performance that are most usually at the organisations' disposal - on the basis of which the rewards are to be assigned - are not sensitive enough to discriminate between above- (and below-) average performers, do not reflect the whole range of the manager's performance, or are significantly influenced by factors that are beyond the manager's control (Merchant, 1989). To arrange, therefore, the distribution of the organisational rewards available on the basis of such performance evaluations may be, in the best case scenario, a waste of money, as such incentives schemes should not be expected to cause managers to work any harder (Chief Executive, 1979 ; Nelson, 1999, 1999a ; Sanchez, 1999) ; at worst, argue a number of authors, they could bring more undesirable than desirable motivational effects (e.g., Hamner, 1975 ; Pearce, 1987 ; Kohn, 1987). In the same line of argument, Emmanuel et al. (1990) point out that the motivational effectiveness of any results-dependent reward plan is bound to be conditioned by the completeness, accuracy and controllability of the measures of performance on the basis of which the rewards are assigned. Moreover, they argue that the rewards are likely to act as positive reinforcement of whatever behaviour - functional or dysfunctional - the measures draw attention to: "...it seems clear [that] if communications to the managers about what it is important are not correct [that is, the role of

performance measures], that error is compounded if the communications are reinforced with promises of large incentive awards" (Emmanuel et al., 1990, p. 268). Similar cautions are made by Lawler (1994) who identifies potential unintended side effects of tying rewards to individual performance such as i) the neglecting of certain aspects of performance, which albeit crucial for organisational success, are neither measured or rewarded by the company's PMERS and are therefore ignored by the managers, ii) the reporting of invalid data on the behalf of the managers in order to make their performance look better than it actually is, and iii) the lack of co-operation and the creation of an antagonistic climate among peers who are competing for the same rewards. To the extent then that such performance-contingent reward schemes are - particularly in a managerial performance evaluation context - so easy to misdesign and mismanage, and can equally easily result in the displacement and / or misdirection of managerial motivation, the concerns that are expressed about their motivational efficacy are, at least to some degree, justified. Perhaps it is such considerations about the pitfalls associated with performance-related rewards that in many case has led companies to leave the terms of the motivational contracts purposely implicit, sometimes even unwritten. Keeping the contract terms about the reward promise more implicit and flexible may compromise the potential motivational advantages arising from a close connection between individual performance and received rewards, but at the same time can also help avoid adverse behavioural consequences related to performance measures and standards that are either inherently insufficient to properly direct the managers' behaviour towards the right directions in the long run, or have simply been set for other than motivational purposes (Merchant, 1989).

7.4.1.4 Considering the Effect of the Environmental Factor on the PMERS Design

The present study provided evidence that offer empirical support for the contingency theory argument advanced in earlier chapters, i.e. that, from a motivational point of view, different performance evaluation systems may be more appropriate than others in different environments. Indeed, in the context of the present research, despite the fact that the PMERS that was used to evaluate and reward managerial performance was essentially the same for the whole sample of the middle managers surveyed, the managers who considered themselves operating in environments of relatively higher uncertainty and unpredictability tended to perceive the performance standards set within the PMERS as significantly less attainable, and the performance measures employed as significantly less accurate, than did the middle-level managers who thought they were working

under more certain and predictable conditions. Hence, it seems that the managers' perceptions about pivotal PMERS characteristics such as the accuracy of measures and the attainability of standards - in essence, their perceptions about the ability of the PMERS to capture their performance accurately and evaluate it equitably - are apparently contingent on the relevant features of the organisational environment within which both they (the managers) and the system have to interact.

All in all, at the level of practice the above findings hold the greatest relevance for controllers and other executives responsible for the design and implementation of management control systems in organisations, especially in terms of helping them differentiate the performance appraisal system according to variations in the manager's job environment. Fundamentally, these results suggest that the environmental uncertainty variable is critical for the design of the company's PMERS and furthermore imply that the search for a universally appropriate system that can be uniformly applied with the same success in every job environment is probably futile ; instead, the design of the company's performance evaluation system is better seen as situationally specific (Dermer, 1977), as contingent on the relevant (actual and perceived) conditions of the organisational environment for which it is intended (Otley, 1980). To the extent that the PMERS's actual and perceived equity - and thereof its potential motivational effectiveness - is likely to depend not only on the system's absolute technical characteristics, but also on its relative (actual and perceived) compatibility and level of fit with the particular environmental circumstances within which it operates, the recommendation to design the company's formal performance evaluation system so that it can appropriately adapt to the specific environmental and task requirements of the manager's job appears justified.

More specifically, in conditions of relative certainty and environmental stability, middle-level managers are expected to be involved in programmed decision making about largely static, more or less well-defined, independent, structured and repetitive tasks (Emmanuel et al., 1990). In such environments, where i) the main key variables can be more precisely identified, ii) the results of given managerial actions can be more accurately predicted (March & Simon, 1958), and therefore iii) the information asymmetry between top and middle management regarding means, ends, and means-ends relationships is comparatively small, the generation of objective and verifiable data for control and performance evaluation is fairly straightforward. With a relatively

accurate and detailed predictive model at its disposal, top management can in this context design and administer centrally a PMERS that can, first, successfully narrow down managerial performance into a complete set of measures / dimensions essential for the organisation's success, and, further, assess the middle-level manager's performance in relation to clearly defined, attainable standards set in advance in all the critical performance areas identified by the measures. Essentially, in the programmed decision making scenario, where the given environmental circumstances allow top management to establish measures and targets of managerial performance that are - and, perhaps more importantly, are *perceived* by the middle-level managers in question to be - accurate, complete (for measures) and unambiguously clear (for targets), the typical PMERS is more likely to be seen as an equitable mechanism for managerial performance evaluation, and thereby as a more relevant tool for extrinsic motivation and behaviour modification.

However, as this study indicated, in more complex and dynamic environmental circumstances, such performance evaluation mechanisms may be of limited relevance from a control and motivation point of view. In more uncertain and unpredictable job environments, middle-level managers will typically have to contend with an increasing number of unexpected and novel events, which will essentially force them to engage, on a daily basis, in a fair amount of non-programmed decision making about largely interdependent and overlapping tasks and activities that, as a rule, are difficult as well as impractical to specify and document in advance of their execution (Waterhouse & Tiessen, 1978). In this setting, where, by definition, i) the critical success factors are difficult to identify and constantly changing, ii) the knowledge regarding the outcomes of given managerial actions (i.e., knowledge about cause-effect relationships) is implicit and incomplete (Thompson, 1967 ; Watson, 1975), and iii) the information asymmetry between top and middle management about the means (managerial actions) necessary to achieve the - anyway unclear - organisational ends (purposes) is high (Emmanuel et al., 1990), the top management's ability to establish accurate ex-post performance measures and explicit a priori targets for managerial performance evaluation is bound to be limited (Govindarajan, 1984 ; Brownell, 1985). Further, as the present study indicates, an even more challenging task than actually building an equitable PMERS under such environmental conditions will be for top management to *convince* the company's middle-level managers - i.e., *reinforce* their perceptions - about the accuracy and equity of the particular system.

Middle-level managers operating in highly uncertain environments are likely to be fully aware of the high incidence and high impact of unexpected and novel events in their job, of the non-programmed decision making context within which their everyday tasks are performed, as well as of the resulting inability both to anticipate the conditions that will exist in the future and to predict with accuracy the consequences of given managerial actions taken today. They are also expected to be fully alert to the objective difficulties involved in establishing in advance clear and specific targets as well as measures that are accurate enough to capture all the critical dimensions of good performance under these environmental conditions (Hirst, 1981). Attempts therefore on the part of a - centrally located and critically distanced from the realities of the middle-level manager's job and task environment - top management team to superimpose and rigidly implement performance measures, which, as this study showed, will most probably be perceived by the middle-level managers in question as inadequate to reflect the whole range of their work effectiveness, are bound to be deemed imperfect and ultimately unfair. Similarly, if the standards of desirable performance on these measures are established in an autocratic fashion during the standard setting process, with top management simply dictating the next period's targets to the middle-level managers responsible for achieving them, chances are that these targets will be seen as unattainable, and therefore unjust, by the middle-level managers involved. In all likelihood, such rigid performance evaluation mechanisms will not be 'internalised' (i.e., will not be accepted and perceived as equitable and relevant by those subject to them) and, furthermore, under certain circumstances, they may be the underlying cause of what is termed in the management control literature dysfunctional behaviour. For example, both Porter et al. (1975) and Emmanuel et al. (1990) argue that the strong and direct linking of rewards that the managers value and want with ambiguous performance evaluations of this kind are more likely than not to instigate opportunistic behaviour - such as biasing and manipulation of performance evaluation data and reports, tampering with performance measures, etc. - on the part of the middle-level managers in question. In essence, in the face of high environmental and task uncertainty, and given the significant amount of non-programmed decision making, the resulting high level of information asymmetry between top and middle-level management about means, ends, and means-ends relationships, and the subsequent difficulty to centrally monitor and control the actions of these middle-level managers, such non-neutral behaviour may be seen as an anticipated reaction on the part of self-interested individuals, who, given the opportunity within their particular organisational

environment, respond in a rational manner to a perceived imperfect, rigidly used, and thus unfair performance evaluation system.

There are nevertheless potential avenues through which the acceptance and 'internalisation' of the PMERS can be accomplished, even in the case of middle-level managers who are operating within the high uncertainty, non-programmed decision-making situation. At a first level, the participation of the middle-level managers in the standard setting process can provide a means of addressing the target-acceptance problem. Allowing middle-level managers to take active part in and negotiate the setting of the targets against which their future performance will be assessed is allegedly a useful strategy that top management can employ so as to ensure that these targets will be fully accepted by the subordinate managers involved as their own personal targets. Indeed, there is a considerable body of literature on the positive behavioural effects of participation in the standard-setting process, basically supporting the view that such participation by the managers to whom the final targets eventually apply may be instrumental in gaining full acceptance of the targets set (see, for example, Argyris, 1972 ; Hofstede, 1968 ; Collins, 1978 ; Brownell & Hirst, 1986). Particularly in the high uncertainty, non-programmed decision making scenario, where the lower-level managers are believed to possess more detailed, up-to-date and valid predictive models than the top management, and it is essentially their experience, intuition, judgement, innovation and skill that is required to provide solutions to largely unique problems (Emmanuel et al., 1990), such managerial participation in the process of defining next period's targets is considered beneficial, if not imperative, so that the performance standards set are (and, further, are accepted by the middle-level managers in question to be) realistic and relevant.

The high level of information asymmetry between top and middle-level management as to the likely outcomes of given managerial actions - a 'necessary evil' in the uncertain and unpredictable environment - gives, however, the middle-level manager the opportunity either to intentionally bias his / her forecasts in the standard-setting process, or, at a later stage of the performance evaluation process, to manipulate (misrecord and / or misreport) his / her actual performance data if he / she believes that this is in his / her own best interest. There is empirical evidence in the management control literature showing that participation in the setting of next period's standards may lead managers to present false estimates of what is possible and reasonable in terms of their future performance, especially when they have a powerful incentive to do so (Argyris, 1952 ;

Lowe & Shaw, 1968 ; Schiff & Lewin, 1968 ; Hofstede, 1968). Thus, particularly in the high uncertainty situation where plenty of opportunities for such dysfunctional behaviour exist, it is essential that the PMERS is designed and implemented in a way that - at the very least - will *not encourage* middle-level managers to engage in non-neutral actions (i.e., incorporate 'slack' into targets or manipulate actual results) which essentially are contrary to the organisation's overall short- and long-term objectives.

At a second level then, the removal of such PMERS-related incentives for opportunistic behaviour, as well as the definitive acceptance of the PMERS by the company's middle-level managers, pass through the *de facto* recognition on the part of the top management, first, of the multidimensionality and complexity of the middle-level manager's task performance within the more unpredictable und uncertain conditions, and second, of its own inability to accurately measure, evaluate and further reward the middle-level managers' effectiveness through any one performance measure under these conditions. Potentially fruitful avenues toward this direction may include the adoption of a more flexible and subtle, but at the same time, broad performance evaluation and reward style that could be based on

(i) the de-emphasis of the absolute role of the - in any case incomplete and ambiguous in the high uncertainty situation - measures and standards, and their conscious use in a more sensible and 'tolerant' way in the performance evaluation process,

(ii) the utilisation of a multitude of quantitative and qualitative, financial and non-financial, historic- and forward-looking, short- and long-term oriented performance indicators[5],

[5] Evidence from the field indicates an increasing trend towards the use of qualitative, non-financial measures in managerial performance evaluation and compensation practice within the current highly uncertain and dynamic business reality. For example, Lavin (1994) reports that Chrysler Corporation pays bonuses to its 200 top managerial staff based on the attainment of vehicle quality and customer satisfaction targets in addition to measures of profitability. Anthony et al. (1992) discuss the use of additional non-financial performance measures by General Electric and McDonald's, providing the following summary of their measures : "When General Electric decentralized in the 1950s, it identified multiple measures of divisional performance : profitability, market position, productivity, product leadership, personnel development, employee attitudes, and public responsibility...McDonald's evaluate its store managers on product quality, service, cleanliness, sales volume, personnel training, and cost control" (p. 651). In like manner, Ford Motor Company recently announced a management compensation plan, similar to the plans used by General Motors and Chrysler, which includes non-financial customer satisfaction and operational measures (New York Times, 1998). A recent study of management compensation practices at 1,400 companies conducted by William Mercer, Inc. found that many companies used non-financial measures in determining incentive compensation both at the top and at the middle management level. Thirty-five percent of the companies used customer satisfaction measures in the incentive payment formula and another 33% planned to do so. The rate of on-time delivery of products or services was used in the programs of 33% of the companies and was being considered by 24% of those polled (Journal of Accountancy, 1993). Other studies on Japanese and British companies also indicate an expansion of performance measurement systems and an

which will complement each other in the process of the assessment of the manager's effectiveness, and will extend the actual and the perceived scope (i.e., the accuracy and completeness) of the PMES both in terms of the dimensions measured and the time periods covered,

(iii) the (explicit or implicit) detachment of the organisational rewards administered to the middle-level managers from this performance evaluation process, with the intention of convincingly signalising that in the given uncertain and unpredictable conditions, where the manager's effectiveness is recognised to be significantly influenced by a number of unforeseen factors beyond the manager's control, it is not the achievement of specific results on the selected performance measures, but rather the overall positive decision making and action taking towards the firm's best interest that is highly valued and rewarded.

This more flexible performance evaluation and reward style is more likely to neutralise the possible negative motives the middle-level manager may have in the high uncertainty / high information asymmetry situation to misuse his / her opportunities for participation both in the standard setting and in the ex-post performance appraisal process. Particularly if coupled with a long-term, multi-dimensional orientation, and an emphasis - to the extent possible - on the responsibility-controllability principle, it may be able to increase the manager's confidence on the controllability, accuracy, completeness, and overall relevance of the performance measurement system, and ultimately to induce the manager to use the PMERS for self-control. Overall, the underlying argument here is that, the recognition that any PMERS has inherent, unavoidable inadequacies when it comes down to the evaluation of managerial performance in the high uncertainty scenario, does not necessarily mean that it should be abandoned altogether ; with some adjustments in the way it is used and interpreted, it can avoid potential dysfunctional side effects and play a positive role in motivating the organisationally desirable behaviour (Drury, 1996).

In sum, what is put forward here is a contingency approach to the design of the company's PMERS. As illustrated in next page's Figure 7-2 (a diagrammatical representation of the contingency approach, largely adopted by Emmanuel et al., 1990, p.368), when environmental and task uncertainty is low, the decision-making is mostly programmed and repetitive in accordance

increasing use of non-financial measures in performance appraisal practices (e.g., Hiromoto, 1988 ; Rees & Sutcliffe, 1994).

with a specific well-known plan, and the relationship between actions and results can be clearly specified and measured, centrally designed and administered systems of carefully selected performance measures, standards and performance-related rewards can be an effective tool for performance evaluation at the middle management level. In conditions of higher environmental and task uncertainty, where the organisational objectives are less clear, the model of predicting the results of alternative courses of action is imperfect, the decision-making is largely unique and non-programmed, and the measurement of actual outcomes is problematic, a less rigid and more 'involving' performance appraisal and reward system, that centres around

→ the participation of middle-level managers in the standard-setting process,

→ a less strong link between rewards and managerial performance, and

→ performance evaluation being conducted in a more flexible manner with a longer time horizon

is highly recommended.

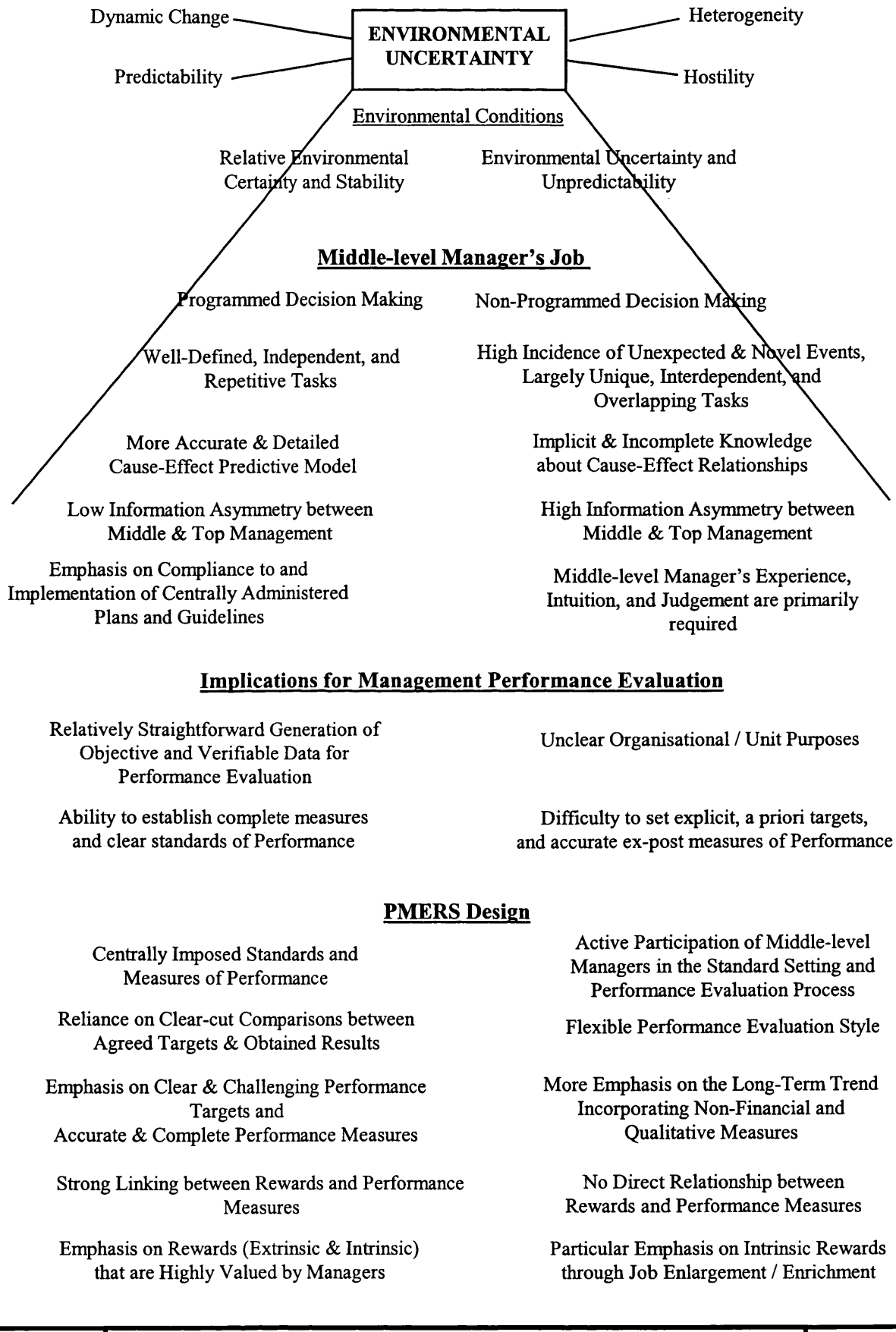


Figure 7-2 : Environmental Uncertainty and Contingent PMERS Design

On the whole, as strongly emphasised at the beginning of the present study, this research endeavour was structured upon the fundamental premise that control is basically a behavioural issue, and, thereof, that the ultimate criterion by which any system of control (such as the PMERS) should be assessed is, in any case, behavioural ; that is, to what extent does such a system succeed in influencing managers to behave in organisationally desirable ways. If we take this basic assumption to be our starting point, then it follows that the challenge - as well as the main PMERS design consideration - both in the high and in the low uncertainty situation, is to design and implement systems of performance measures, standards and related incentive schemes that will encourage (or, at the very least, will not discourage) the *specific managerial behaviour* that is necessary in every case for the attainment of the organisation's objectives. In the low uncertainty / programmed decision-making condition, therefore, the PMERS should be designed so as to concentrate and direct - through the use of appropriate performance measures and valuable, performance-dependent rewards - the middle-level managers' attention, energy, and actions towards the accomplishment of the organisation's objectives as these are clearly identified within the PMERS. In the same spirit - but not in the same manner -, in the high uncertainty / non-programmed decision-making condition the PMERS should be structured and implemented in a way that will motivate middle-level managers to use their intuition, judgement, experience, and superior knowledge of their immediate internal and external environment in order to make the best possible decisions the particular environmental conditions allow.

7.4.2 Implications for Theory

7.4.2.1 Substantiating Contingency Theory : The Effect of Perceived Environmental Uncertainty

One of the primary intents of this exploratory study was to examine the moderating effect of perceived environmental uncertainty on a number of - theoretically presumed as critical from a motivational point of view - managerial perceptions about the Performance Measurement Evaluation Reward process. As highlighted in section 7.3.3, the study's findings indicated that the manager's perceptions about the level of uncertainty in his / her external and task environment seem to have a highly significant influence on these PMERS-related managerial perceptions that were theorised to determine the manager's motivation and subsequent performance. More specifically, it was hypothesised and found that middle-level managers who considered themselves encountering high uncertainty and unpredictability in their job environment tended to perceive the performance standards set within the company's PMERS as significantly less

attainable, and the performance measures employed as significantly less accurate, than did middle-level managers who thought they were operating within more certain and stable working conditions. On these empirical grounds, the recommendation to custom-design and implement the company's formal performance evaluation system differentially, so that it can appropriately match the specific environmental and task requirements of the manager's job, was put forward.

Thus, from a theoretical point of view, the primary relevance of this study lies clearly in its demonstration of environment as a source of contingency for the design of the company's PMERS, as well as in its extension of the contingency theory of organisation from the *inter*firm to the *intra*firm context. It continues the theory development efforts initiated by such authors as Khandwalla (1972), Gordon and Miller (1976), Tomassini (1976), Hayes (1977), Ansari (1977, 1979), Ouchi (1977), Amigioni (1978), Gordon et al. (1978), Hopwood (1978), Sathe (1978), Waterhouse and Tiessen (1978), Otley (1978), Pfeffer (1978), Banbury and Nahapiet (1979), Otley (1980), Ewusi-Mensah (1981), Gordon and Narayanan (1984), Govindarajan (1984) and Emmanuel et al. (1990) who have advanced contingency frameworks for the design of management control systems. Moreover, by fundamentally focussing on the importance of individual perception, attempts to go a step further, stressing the point that from a motivational perspective the company's PMERS needs to be specifically tailored to suit, not as much the actual work environment within which the company's managers perform their everyday tasks, but more critically the managers' *perception* of that specific work environment and of the (external and task) uncertainty they perceive to face in it.

Emmanuel et al. (1990) insightfully point out that the contingency theory approach firmly places the design of the PMERS in the context of organisational responses to the wider environment within which the organisation has to operate, and further relates the PMERS's effectiveness to the system's ability to be adaptive to changes in the given external circumstances. Admittedly, the contingency framework adopted for the needs of this research is presently based on an insufficiently articulated model, limited and weak empirical support, and vague practical recommendations (Otley, 1980 ; Schoonhoven, 1981) ; its conceptual and related methodological clarity is still less than absolute (Waterhouse & Tiessen, 1978). Nevertheless, it was deliberately chosen, first, to underline the fact that there can be no PMERS readily applicable to and equally effective in all organisations and circumstances, and second, to emphasise the paramount

importance of achieving an appropriate matching - in Macintosh's (1981) terminology, a rational technical and organic alignment - of the organisation's PMERS and the environment within which the system and those subject to it have to interact. In essence, it brings to the fore perceived environmental and task uncertainty as factors of paramount importance that have the potential to influence directly intermediate, motivationally critical, PMERS-related attitudes, and therefore need to be taken into account in the process of designing and implementing the PMERS.

Overall, the central underlying notion of the contingency theory model employed in the present study is that the optimal way to structure and manage the company's PMERS - as with any other management control system - is situationally specific, essentially depending on the (actual and perceived) uncertainty associated with the activities the PMERS is intended to evaluate, reward and motivate.

7.4.2.2 Extending the Contingency Theory Perspective: Human Resources as a Contingent Factor

The present research provided also evidence to support the view that different managers tend to value highly and be motivated by different (extrinsic and / or intrinsic) rewards, and thereof went on to offer as a recommendation the 'tailor-making' of the company's reward package on the basis of its managers' individual reward preferences and personal circumstances. On the theoretical level, the above point of view essentially represents an extension of the contingency approach to the design and choice of the company's reward system, specifically contingent upon the nature and specific characteristics of the company's managerial workforce.

As mentioned in the previous section, management control theorists have long moved away from the view that there is one universally appropriate management control system design which can be effectively applied to all organisations in all circumstances with equally positive - motivational and other - results. Instead, based on what is termed in the management control systems literature a 'contingency theory perspective', they maintain that the eventual effectiveness of any management control system - and thereby a central design consideration - is how well the system fits in each case the particular set of environmental, technological, strategic, structural, and cultural circumstances within which the given system has to operate (Otley, 1980). Despite, however, the widespread recognition of the need to specifically tailor the PMERS - as any other management control system, for that matter - to the needs and specific circumstances of the

organisation for which it is intended, most of the prescriptions about the design of the company's reward system are implicitly structured upon a universalistic spirit about the nature of man, basically propounding that there is a single right way to deal with all people in all organisations. Under the assumption that all employees are basically similar in their make up, such approaches are most usually based on 'one best way' rules and principles that can and should apply to the design of reward systems in general, fail to take sufficiently into account the significant differences in personalities, needs, personal circumstances and reward preferences, and, as a result, are often in difficulty to explain the phenomenon of individuals - even within the same organisation - reacting differently to virtually identical reward practices.

Expectancy theory - which provided the conceptual foundations of this study - appears to offer an adequate answer to such dead ends by explicitly introducing the individual differences factor, and by basically postulating thereof that human behaviour is better seen as a process through which each individual makes his / her *own conscious decisions* among alternative courses of action on the basis of his / her *own personal needs and expectations* of whether or not given behaviours will lead him / her to desired outcomes (rewards). On the premises of this notion of 'individualisation' (Lawler, 1974, 1994) we maintain that not only individuals in different organisations, but also members of the same organisation are likely to vary significantly in their preferences and responses to reward schemes and other organisational policies and practices regarding, for example, performance measurement and evaluation systems, leadership styles, job and task design methods, selection and training procedures, and so on. We further argue that this 'individuality' of the company's managerial staff represents a specific feature of the organisation's context, an additional contingent factor whose 'fit' with the company's management control system is bound to critically affect the overall effectiveness of that system, and therefore needs to be seriously considered and accommodated when the system is being designed.

All in all, in an attempt to synthesise the individual differences approach and the contingency theory framework previously outlined, this study proposes an extension of the traditional contingency perspective, incorporating into it the view that, in designing and implementing their management control systems, organisations should consider - apart from the already mentioned in the literature environmental, technological, strategic, structural, and cultural factors - the specific characteristics of the company's human resources.

7.4.3 Implications for Research

7.4.3.1 The Importance of Method and Research Design

On a more methodological level, the practical difficulties encountered in this research, first, to measure variables that basically referred to human perceptions, and second, to consider the multiplicity of the potential extraneous variables pertaining to the phenomenon of interest (that is, the motivation of middle-level managers through the company's PMERS) is perhaps indicative of the inadequacy of purely positivistic methods to unravel complex behavioural research issues of this kind. The present study has taken such a positive approach, and by gathering cross-sectional data of a more snapshot nature, attempted to answer questions regarding the type of relationships (in terms of direction, strength and frequency) that exist among the organisation's environment, PMERS, and its middle-level managers' behaviour. And although, this is one of the few empirical studies in the area of management control with real middle-level managers providing attitudinal data (i.e., perceptions) about the company's PMERS and its effect on behaviour, it has to be admitted that the choices made with respect to the study's research method and design have somewhat restricted its scope both in terms of the type of the questions asked and answered, as well as in terms of the number and dimensions of the variables examined. For example, the complex abstraction of managerial behaviour was conceptualized, operationalised and conveniently narrowed down into - the much more 'tangible', measurable and quantifiable dependent variables of - managerial motivation and managerial performance, which, further in the process, were measured through the use of a single, self-reported measure in each case. In the same 'reductive' spirit, a large number of (allegedly pivotal in the relevant literature) intervening variables that could enhance our understanding of the intricate relationships involved in the influence and direction of managerial behaviour through the PMERS, (e.g., the extent and manner in which the PMERS is actually used, the level of participation and active involvement in the process of designing and implementing the PMERS, or the cultural background of the managers expected to function within it) were omitted for merely practical reasons. In essence, the study inevitably focused on only a few dependent and independent variables pertaining to the expression of managerial behaviour (that is, managerial motivation and performance) and the PMERS's design characteristics (i.e., the accuracy of performance measures, the attainability of performance standards, and the value and performance-dependency of organizational rewards), as well as on the effect of a single, two-dimensional, moderating variable, namely the (task and external) environment within which both the PMERS and the middle-level managers subject to it

have to operate. Overall, all the largely unavoidable and well documented in the literature 'sins' of the so called "method-driven" - as opposed to the "phenomenon-driven" - studies, that fundamentally reflect an inherent inconsistency between theory statement and empirical verification (Briers & Hirst, 1990) and basically refer to

i) the use of surrogate measures for obscurely defined constructs
ii) the range restriction in variable measures
iii) the omission of variables that could offer alternative possible explanations for the obtained findings
iv) the inability to provide evidence for causal relationships among the designated variables, and
v) the general use of hypothesis testing procedures that are only indirectly related to the theory-derived propositions,

are certainly evident in this research.

Gordon and Narayanan (1984) inspiringly advocate the view of organizations as a dynamic field of innumerable interaction patterns at the individual, organizational and environmental level, and insist that the role management control systems play in facilitating organizational success and survival affects, and is affected by, these various interaction patterns. Otley (1980, 1994) and other researchers in the area of management control (e.g., Govindarajan & Gupta, 1985) argue on the same matter that particularly in situations where a complex pattern of interaction among a large number of variables exists - or perhaps because of it -, it is unrealistic to expect survey methods of data collection and purely statistical approaches to data analysis to provide adequate answers. The exclusive use of cross-sectional, questionnaire-based research designs, they point out, essentially limits the type of phenomena and relations that are amenable to investigation, and this is surely a lesson well learned in the context of the present research.

On the other hand, more phenomenological methodologies that are "...anthropological in nature...involve [the in-depth examination of] a small number of carefully selected cases...the close involvement of the researcher with the organizations over a period of time...and are intended to be illuminative rather than being concerned with the rigorous testing of pre-determined hypotheses" (Otley, 1980, pp. 424-425), may be proven more useful in eliciting valid information about the causes and consequences, the interactions and dynamics of phenomena that are intricate,

confidential or sensitive in their essence. Particularly in research endeavours such as this one, where the focus of attention is on internal human *processes* that admittedly have a temporal dimension, in-depth case studies - preferably with a longitudinal scope - may provide a clearer perspective of why and how given control systems (such as the PMERS) impact on the individual's motivation and performance, thereby improving our understanding of the way in which these system ought to be designed and implemented in different environments in practice.

7.5 Suggestions for Further Research

Having evaluated the results and implications of this study, as well as its main strengths and weaknesses, this last section offers a number of directions for further research that appear worth exploring.

To start with, future research endeavours could consider replicating the present study in different environmental and cultural settings, at different organizational levels, and with different populations. Abernethy et al. (1999) rightly point out that, particularly in the area of management accounting and control, "...there is a need for a stronger tradition for replication studies" (p. 23). Especially in the context of the present study where data were drawn from a single research site and from a non-random (and therefore not representative of the entire target population) sample, constructive replication - i.e., theory-led replication work rather than mere repetition motivated by the need to fill 'gaps' (Otley, 1980 ; Briers & Hirst, 1991) - across populations and settings, and / or over different time periods would certainly add to the generalisability (external validity) of the findings.[6]

Another worthwhile avenue for future research would be to consider theoretically and examine empirically the role of a number of factors (moderators) that have been consistently hypothesised in the management control literature to exert a critical intervening effect on the motivational effectiveness of the PMERS. This study essentially failed to confirm the expectation that

[6] Indeed, the idea of extending the present study longitudinally, by possibly administering the existing questionnaire for a second time in the participant company to examine the managers' perceptions (and the development of these perceptions in the course of time) about the company's new formal PMERS has been seriously considered. This possibility is currently being explored and negotiated with executives from Bank Sigma.

perceived PMERS design features (i.e., the performance measures' accuracy and the performance standards' attainability) are related to the managers' motivation and performance. Thus, further research work along this line, specifically examining,

(i) on the one hand, the moderating effect of contextual variables (such as the size, structure and culture of the organisation, the nature and style of use of other management, control, information, and leadership mechanisms in operation within the organisation, or the level of trust in the supervisor's impartiality and assessment ability),

(ii) and on the other, the effect of more idiosyncratic parameters (e.g., the manager's abilities, skills, and personal traits, his / her cultural and educational background, personality type, and cognitive style, etc.),

may provide alternative plausible explanations for the given set of results obtained here about the motivational effect of performance measures and performance standards.

On a related issue, the findings reported here suggest that the manager's motivation is primarily affected by the extrinsic and intrinsic rewards that he / she perceives to enjoy in the context of his / her job environment. Given the importance of rewarding from a motivational point of view, future research initiatives may consider focusing on issues relating to the design of effective reward systems. For instance, investigating the role and nature of the relationship between extrinsic and intrinsic rewards in the determination of managerial motivation (antagonistic or synergistic) is a research question that was not fully addressed in the present study and surely warrants special attention and consideration. Also, examining the motivational effectiveness of team reward packages in the context of the modern N-form organization (Hedlund, 1994) is another potentially fruitful and intriguing research area. Within these 'flatter', more decentralised organizational forms and structures, where the performance of and interaction between cross-functional, small-size teams is considered to be a key element for the achievement of the overall organizational objectives (McBain, 2000 ; McClurg, 2001), the examination of the design and actual impact of the reward systems that are utilized to motivate such team performance presents increased interest.

Advances can also be made in terms of a further exploration of the variables considered in the present study. For example, given that the PMERS's features variable is clearly multi-dimensional, opportunities exist for further analysis of the effect of different (actual and

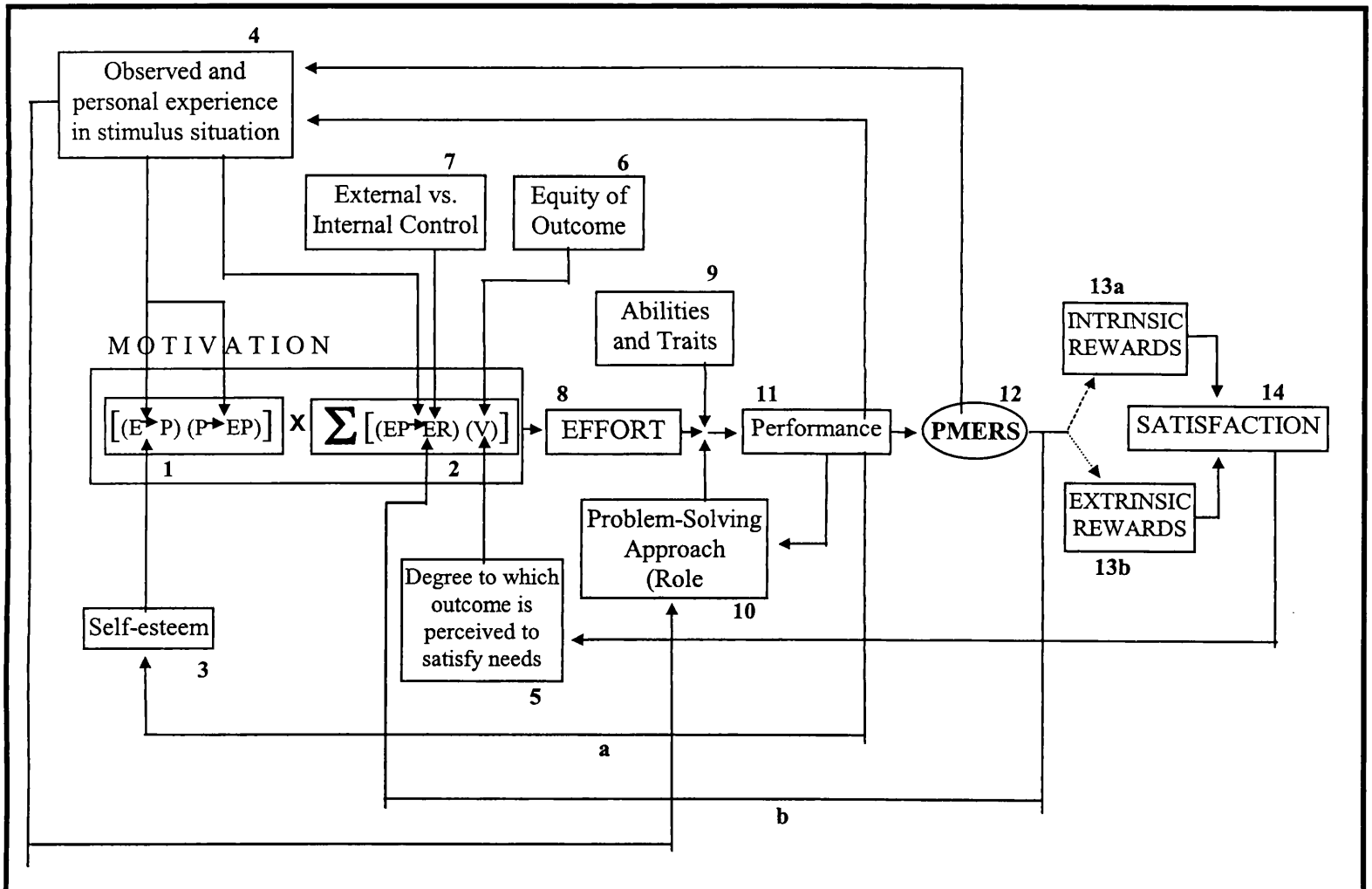
perceived) performance measures' and performance standards' design characteristics (e.g., congruence, responsiveness, completeness, objectivity, verifiability, specificity, time of setting, internalization) on managerial behaviour. The scope of the present study could also be extended by examining the impact of the PMERS on - or its relationship with - a multitude of dependent (outcome) variables, essentially a number of psychological and behavioural responses that present particular interest from a micro-behavioural point of view, such as the creation of tension, resentment and conflict on the job, or the incidence of dysfunctional (e.g., invalid data reporting, non-neutral decision making, rigid bureaucratic behaviour, etc.), competitive, or cooperative behaviour on the part of the managers involved. With regard to the uncertainty variable, future studies may also explore different and / or alternative dimensions of environmental and task uncertainty (i.e., hostility, competitiveness, restrictiveness, complexity, dynamism, heterogeneity, unpredictability, instability, variability, etc.), or may focus more on the relationships of the objective and physical characteristics of the manager's job and environment with critical managerial job attitudes such as the manager's work satisfaction, motivation and performance. These developments are seen as especially important when the aim is to design, rather than to explain, contextually appropriate management control systems (Hartmann, 1997).

On the methodological level, the adoption of a multi-disciplinary perspective (Otley, 1980 ; Vagneur et al., 1995) that will enable the integration of recent advances and well-tested theories from the behavioural literatures, the identification of critical constructs and variables that need to be considered, and the refinement of the measurement instruments used, seems to be a highly desirable research strategy in the investigation of the motivational role of management control systems. Such a theoretical and conceptual pluralism, especially if coupled with multi-method, multi-rater research designs that have the potential to balance out their relative strengths and weaknesses (Govindarajan, 1984 ; Birnberg et al., 1990 ; Rosenthal & Rosnow, 1991 ; Lindsay & Ehrenberg, 1993), can be expected to yield particularly fruitful results and enhance our understanding of the intricate relationships and processes involved in the influence and direction of managerial behaviour through the PMERS. Gaining additional insights into the process of motivation within the performance evaluation and reward situation still remains a critical research and practical issue, particularly given the significant relationship that the manager's motivation is presumed - and shown in this study - to have with his / her short- and long-term job performance.

Lastly, we are inclined to agree with Hartmann (1997) that further developments in management control research should eventually be directed toward integration of individual findings and the development of a 'more cohesive body of knowledge' (Young, 1996). As Otley (1980), Emmanuel et al. (1990), Briers and Hirst (1990) and other scholars in the area of management control point out, the PMERS is only but one of the means that organizations employ to influence and control the behaviour of their members, and, accordingly, its role and effect need to be understood and examined within the overall context of the other administrative, social and self control mechanisms which are also operative at the same time in the organization. The integration therefore of all the latest conclusions of contemporary management control research into a wider framework of cumulative knowledge will allow the identification and further examination of the entire network of relationships between all the different variables to take place - variables and relationships that have, to date, been considered only individually in the management control research -, and is likely to facilitate the understanding of the management control phenomenon in all its holistic quality.

Appendices

on the motivation of managers.



Sources : Porter, L.W. - Lawler, E.E. (1968), "Managerial Attitudes and Performance", Irwin-Dorsey.
Lawler, E.E. (1971), "Pay and Organisational Effectiveness : A Psychological View", McGraw-Hill.
Nadler, D.A. - Lawler, E.E. (1977), "Motivation : A Diagnostic Approach", McGraw-Hill.
Jiambalvo, J. (1979), "Performance Evaluation and Directed Job Effort", Journal of Accounting Research.

The above theoretical model of managerial behaviour represents a synthesizing attempt to merge the work of Vroom (1964) and Porter and Lawler (1968) in the area of expectancy theory with the traditional management control literature on managerial motivation through the company's formal PMERS (e.g., Hopwood, 1973 ; Merchant, 1989 ; Emmanuel et al., 1990). It is not proclaimed to be either complete or final, or to provide for a total explanation of the relationships existing between the variables it identifies. Rather, it may be better seen as a conceptual scheme that is developed to guide thinking with regard to the phenomena of work motivation, performance and satisfaction at the managerial setting. In this sense, the model is a vehicle to be used in :

- conceptualising the aforementioned phenomena of interest by identifying a number of key variables
- generate hypotheses about possible cause-effect relationships between these key variables
- generally stimulate additional theory building and empirical testing work in the area of human behaviour and management control systems design.

Appendix B : Author's Letter to Potential Participant Companies

< Name of recipient >,
< Position of recipient >,
< Name of company >,
< Address >

UNIVERSITY of GLASGOW

Department of Accounting and Finance

Glasgow, 18 June 1999

Dear Sir,

Subject : A Research Project on Managerial Motivation

I am sending you this letter in order to explore the opportunity of your company taking part in a research project on management control systems and managerial motivation. This is the focus of my doctoral research and I am now seeking a corporate partner to conduct fieldwork.

The primary aim of the above mentioned research project is to examine whether middle level managers are equally well motivated when they face differing degrees of environmental and task uncertainty. The study has implications for the design of performance measurement and incentive systems, in particular, whether these need to be tailored to the individual or position.

Your co-operation would enable this question to be addressed and data to be collected. The benefits to your company are :

a) an independent evaluation of how current performance measurement and incentive systems influence managerial motivation and performance
b) potential insights to improve the design of current systems.

Total confidentiality can be guaranteed for your company and the participating managers

To give a clear indication of the project, a draft of the questionnaire that is intended to be utilised in the study is enclosed. This questionnaire takes no more than 15 minutes to complete and can be administered either in a hard-copy form or through the e-mail. A meeting to discuss the questionnaire's format and content, as well as the most appropriate means to administer it would be very much appreciated, but if you would prefer to contact me prior to this, my addresses are at the foot of this letter. My supervisor, Professor Clive Emmanuel, is also happy to answer any queries you may have.

I thank you in advance for your time and interest.

My contact address at the University of Glasgow is :

George Kominis,
University of Glasgow,
Department of Accounting & Finance,
65-71 Southpark Avenue,
Glasgow, G12 8LE,
Scotland, United Kingdom.

whereas my telephone number, fax, and e-mail at the University are :

Tel. : 0141-330 5667
Fax : 0141-330 4442
E-Mail : 9609037k@student.gla.ac.uk

Professor Clive Emmanuel : Tel. : 0141-330 5575 / 5566
Fax : 0141-330 4442
E-Mail : C.Emmanuel@accfin.gla.ac.uk

Yours sincerely,

George Kominis
Ph.D. Student, Glasgow University.

Letter also sent to : < Name of recipient >
< Position of recipient >
< Name of company >

Appendix C : Cover-letter Accompanying the Questionnaire

Department of Accounting and Finance
65-71 Southpark Avenue,
Glasgow, G12 8LE.
Telephone : 0141-330 5667
Fax : 0141-330 4442

Prof. Clive Emmanuel
Mr. George Kominis

27 August 1999

Dear Participant,

In co-operation with the < Name of Company > and as part of a Ph.D. programme at Glasgow University, this research project has been set up to investigate the impact of Management Control Systems on the Motivation and Performance of managers who are operating within diverse environments. The present study seeks firstly to assess the effectiveness of these systems, and secondly to offer recommendations for the improvement of their design.

We are contacting a cross-section of managers within the < Name of Company >, asking them to give us their opinions on these issues. In order to be sure that all points of view have been taken into account, it is critical that we get a reply from all the managers that have been selected to participate in the study, so clearly your individual response is highly appreciated.

Please note that, in accordance with the Bank's specific request, all the information provided will be treated in the strictest confidence, will be used only for the purposes of the project, and will be published later only in summary, statistical form. Although < Name of Company > is giving us its full support and co-operation, this research is organised and administered completely independently from the Bank. The Bank will not see the responses of individuals to the questionnaire, and respondents will not be identified in any way. Furthermore, in order to preserve anonymity, the questionnaire does not ask for your name. So please help us by answering the questions to the best of your ability. A summary of the results of this research project will be made available to you, on request, from the Bank in due time.

Please fill in and return the completed questionnaire in the enclosed reply-paid envelope - if possible by the 10th of September 1999. If you have any queries about the questionnaire or the study in general, please do not hesitate to contact us in Glasgow University either by telephone (0141-330 5667 or 0141-334 0226), fax (0141-330 4442), or through the e-mail (9609037k@student.gla.ac.uk). We will be happy to help.

Thank you for your assistance.

Yours sincerely,

George Kominis

UNIVERSITY
of
GLASGOW

Department of Accounting and Finance

Questionnaire on :

The Impact of the Performance-Measurement-Evaluation-Reward System on Managerial Motivation.

A Research Project administered by **George Kominis** and supervised by **Professor Clive R. Emmanuel**, Department of Accounting and Finance, University of Glasgow.

Glasgow, August 27th, 1999

Section 1 : Introduction

A Study in Management Control Systems and Managerial Motivation

Initially, we would like to thank you for your support and participation in this study. As part of a Ph.D. programme at Glasgow University, this research project is interested in examining the impact of Performance Measures and related Rewards on managers' Motivation and Performance.

The questionnaire that follows includes a number of questions that basically attempt to capture your personal perceptions about the formal Performance-Measurement-Evaluation-Reward System (PMERS) of the company in which you are working. Although we know that you may find some of the questions repetitive, please make an effort to answer all of them.

In the following questionnaire, we are particularly interested in your own personal beliefs, opinions, and experiences. **At this point it is important to stress once more that all the information you provide in the next sections is strictly confidential and will be used only for the purposes of the project.** The company will not have access to individual questionnaires, and you will not be identified in any way.

You will find useful instructions of how to answer the relevant questions at the beginning of each section. If, however, you have any queries about the questionnaire, you can always contact us in any of the ways indicated (telephone, fax or e-mail) in the covering letter. We will be there to help.

Before you start completing the questionnaire, please spend some time to provide us with some personal details. You are to **fill in the cells** provided below with the information required.

Personal Details

Company's Name :

Position in the Company :

No. of Years in the Position :

Please move on to the next section . . . . . .

Section 2 : Value of Job Outcomes-Rewards

It is well accepted that managers can be found to enjoy a wide range of rewards, provided by the companies in which they work for the managerial services that they deliver.
Different companies, however, provide different rewards for different managerial positions, whereas, at the same time, managers themselves are quite often found to differ widely in their judgements about the value of these rewards.

Please **identify** as many as possible Outcomes-Rewards associated with your own job. (Examples of such job outcomes may include tangibles such as cash bonus, stock options, promotion, and/or fringe benefits etc., as well as intangibles such as opportunity to develop your skills and abilities, opportunity to enjoy more authority and responsibility, opportunity for independent thought and action, and/or feelings of security, accomplishment, personal growth and development, etc.). Then **rate** these Job Outcomes-Rewards on the basis of how important (desirable) each of them is to you.

You are to **fill in** as many of **the cells** provided below as you can with the outcomes-rewards which you believe are related to your job. Subsequently, rate each outcome-reward by **circling on the rating scale** provided the number that represents your own evaluation of how important (desirable) each job outcome is. If you think that a job outcome is extremely desirable (important) to you, you would circle number 7. If you think that a job outcome is moderately important (desirable) to you, you would circle number 4, and so on.

For each job outcome, circle **only one** number.

Form of Rewards	Rating Scale
a.	**1 2 3 4 5 6 7** unimportant — moderately desirable — extremely desirable
b.	**1 2 3 4 5 6 7** unimportant — moderately desirable — extremely desirable
c.	**1 2 3 4 5 6 7** unimportant — moderately desirable — extremely desirable

Please turn to the next page

Form of Rewards	Rating Scale
d.	1 2 3 4 5 6 7 (unimportant … moderately desirable … extremely desirable)
e.	1 2 3 4 5 6 7 (unimportant … moderately desirable … extremely desirable)
f.	1 2 3 4 5 6 7 (unimportant … moderately desirable … extremely desirable)
g.	1 2 3 4 5 6 7 (unimportant … moderately desirable … extremely desirable)
h.	1 2 3 4 5 6 7 (unimportant … moderately desirable … extremely desirable)

Generally speaking, which type of job Outcomes-Rewards do you think you value more, and why ?

Please move on to the next section . . . . . .

Section 3 : The Performance-Measurement-Evaluation-Reward-System (PMERS)

In this section of the questionnaire you will be required to express your personal beliefs about the company's formal Performance-Measurement-Evaluation-Reward System (PMERS), that is, the formal process known as Appraisal and Development Review (ADR) and used by the company in order to measure, evaluate, and reward your performance.

Below there are a number of questions concerning this formal System of Measuring, Evaluating, and Rewarding your Performance. You are to read carefully each of these questions and answer them by **circling on the corresponding scale** the number that represents your opinion.

Please do not omit any of the questions.

Questions about the PMERS	**Rating Scale**
How often do you feel that you can actually reach the standards of performance as these are defined by the PMERS of the company, if you put a great deal of effort into your job ?	**1 2 3 4 5 6 7** never sometimes almost always
Would you consider the Environmental Uncertainty that you are facing in your job to be a critical factor affecting your ability to reach these PMERS-defined standards of performance ?	**1 2 3 4 5 6 7** very little somewhat very much
How often do you feel that your actual performance is captured and reflected properly by the PMERS of the company ?	**1 2 3 4 5 6 7** never sometimes almost always
Would you consider the Environmental Uncertainty that is associated with your job to be a critical factor affecting the PMERS's ability to properly capture and reflect your performance ?	**1 2 3 4 5 6 7** very little somewhat very much

Please turn to the next page

ATTENTION :

Please answer the rest of the questions of this section relative to your answers in Section 1. Transfer in the cells provided below, the Outcomes-Rewards you identified in Section 1 before you answer the questions.

Questions about the PMERS

Rating Scale

How often do you feel that the award of

a. [ ]

actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

b. [ ] actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

c. [ ]

actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

d. [ ]

actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

Please turn to the next page

Questions about the PMERS

Rating Scale

How often do you feel that the award of

e. [ ]

actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

f. [ ] actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

g. [ ] actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

How often do you feel that the award of

h. [ ] actually depends on your evaluated performance as this is assessed by the PMERS of the company ?

1 2 3 4 5 6 7
never sometimes almost always

All in all, how would you comment on the overall effectiveness of the company's PMERS to measure, evaluate, and reward your performance ?

Please move on to the next section . . . . . .

Section 4 : Job Performance

The purpose of this section of the questionnaire is to determine how you rate yourself, relative to others in your organisation with similar management duties, on a number of aspects/functions relating to your Job Performance.

You are to **circle on the rating scale** provided the number that represents where you believe you stand on each different aspect of your job, compared to others with similar management duties. If you think you are low on an aspect, you would circle number 1. If you think that you are a little less than average, as compared to others with similar management duties, you would circle number 3, and so on.

Please do not omit any scales.

Aspects / Functions of your Job	Rating Scale
Planning	**1 2 3 4 5 6 7** low average high
Investigating	**1 2 3 4 5 6 7** low average high
Co-ordinating	**1 2 3 4 5 6 7** low average high
Evaluating	**1 2 3 4 5 6 7** low average high
Supervising	**1 2 3 4 5 6 7** low average high
Staffing (Recruiting, Placing, Transferring, and Promoting employees in the unit)	**1 2 3 4 5 6 7** low average high

Please turn to the next page

Aspects / Functions of your Job	Rating Scale
Negotiating	**1 2 3 4 5 6 7** low average high
Representing	**1 2 3 4 5 6 7** low average high
Overall Quality of your Job Performance	**1 2 3 4 5 6 7** low average high
Amount of Effort you expend on your Job	**1 2 3 4 5 6 7** low average high

On the whole, how would you comment on your Motivation and overall Performance on the job ?

Please move on to the next section . . . . . .

Section 5 : Environmental Uncertainty

Managers, working under different environmental conditions, are faced with varying levels of uncertainty. In this last section of the questionnaire you are required to provide answers to a series of questions that will allow the level of Uncertainty you associate with your job to be gauged. Please note that the term Uncertainty here refers to the level of Unpredictability and Instability of the environment surrounding your unit.

Please read carefully each of the following statements/questions and **circle on the corresponding scale** the number that represents your opinion.

Please provide answers to all statements/questions.

Statements / Questions about the Uncertainty	**Rating Scale**
How intense is each of the following in your industry ?	
a. Bidding for purchases or raw materials	1 2 3 4 5 6 7 of negligible intensity — moderately intense — extremely intense
b. Competition for manpower	1 2 3 4 5 6 7 of negligible intensity — moderately intense — extremely intense
c. Price competition	1 2 3 4 5 6 7 of negligible intensity — moderately intense — extremely intense
How many new products and/or services have been marketed during the past 5 years by your industry ?	1 2 3 4 5 6 7 none — some — many

Please turn to the next page

Statements / Questions about the Uncertainty	**Rating Scale**
How stable/dynamic is the external environment (economic and technological) facing your unit ?	
a. Economic environment	1 2 3 4 5 6 7 very stable (changing slowly) ... very dynamic (changing rapidly)
b. Technological environment	1 2 3 4 5 6 7 very stable (changing slowly) ... very dynamic (changing rapidly)
How would you classify the market activities of your *competitors* during the past 5 years ?	1 2 3 4 5 6 7 becoming more predictable ... becoming less predictable
During the past 5 years, the tastes and preferences of your *customers* have become :	1 2 3 4 5 6 7 much easier to predict ... much harder to predict
During the past 3 years, the legal, political and economic constraints surrounding your unit have :	1 2 3 4 5 6 7 remained about the same ... have proliferated greatly
How often do new scientific discoveries emerge in your industry ?	1 2 3 4 5 6 7 seldom ... sometimes ... frequently
To what extent would you say that your work in your unit is routine ?	1 2 3 4 5 6 7 to a great extent ... to some extent ... to a small extent

Please turn to the next page . . . . . .

Statements / Questions about the Uncertainty	Rating Scale
How many of your tasks in your unit are the same from day-to-day ?	**1** most of them **2** **3** **4** some of them **5** **6** **7** very few
How repetitive are your duties in your unit ?	**1** very much **2** **3** **4** somewhat **5** **6** **7** very little
"People in my unit do about the same job in the same way most of the time".	**1** to a great extent **2** **3** **4** to some extent **5** **6** **7** to a small extent
"Basically, members of my unit perform repetitive activities in doing their jobs".	**1** to a great extent **2** **3** **4** to some extent **5** **6** **7** to a small extent
To what extent is there a clearly defined body of knowledge of subject matter which can guide you in doing your work in your unit ?	**1** to a great extent **2** **3** **4** to some extent **5** **6** **7** to a small extent
To what extent is there an understandable sequence of steps that can be followed in carrying out your work in your unit ?	**1** to a great extent **2** **3** **4** to some extent **5** **6** **7** to a small extent
To what extent is there a clearly known way to do the major types of work you normally encounter in your unit ?	**1** to a great extent **2** **3** **4** to some extent **5** **6** **7** to a small extent

Please turn to the next page

. . . . . .

Statements / Questions about the Uncertainty	**Rating Scale**
To do your work in your unit, to what extent can you actually rely on established procedures and practices ?	**1 2 3 4 5 6 7** to a great extent — to some extent — to a small extent

In general, what would you say about the effect of the Environmental Uncertainty on your job ?

Thank you very much for your co-operation.

Please return the completed questionnaire in the reply-paid envelope to the following **mail address** :

ACCFIN,
Publicity Services,
University of Glasgow,
FREEPOST SCO 1727,
Glasgow, G12 8QQ,
Scotland,
United Kingdom.

Thank you once again for your time and effort.

George Kominis
Clive R. Emmanuel

Appendix E : Test for Instrument Reliability and Validity

Tables E-1 to E-4 below present the results of the tests performed to assess the reliability and validity of the instruments used in the present study. For each of the composite scales used here to measure the managerial performance-, the task uncertainty-, and the environmental uncertainty-variable, coefficients-α were estimated to assess the scales' reliability, and factor analyses were run to examine the scales' unidimensionality and subsequent homogeneity.

	No. of Cases	No. of Items	a	Inter-item Correlations (range)
Managerial Performance	221	9	,6675	0,1216 - 0,5575
Task Uncertainty	224	9	,7512	0,1033 - 0,4769
Environmental Uncertainty	213	10	,6404	0,1481 - 0,7354

Table E-1 : Instrument Reliability Analysis

	Eigenvalues		
Factor	Total	% of Variance	Cumulative %
1	2,7047	30,0520	30,0520
2	1,8010	20,0113	50,0633
3	1,1732	13,0354	63,0986
4	,7721	8,5785	71,6772
5	,6535	7,2612	78,9384
6	,6014	6,6827	85,6211
7	,4917	5,4637	91,0848
8	,4109	4,5650	95,6499
9	,3915	4,3501	100,0000

Table E-2 : Factor Analysis of the 'Managerial Performance' scale

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4,3170	47,9664	47,9664
2	1,4157	15,7301	63,6965
3	,8990	9,9889	73,6854
4	,5800	6,4445	80,1299
5	,4959	5,5100	85,6399
6	,3846	4,2735	89,9134
7	,3604	4,0040	93,9173
8	,3146	3,4959	97,4132
9	,2328	2,5868	100,0000

Table E-3 : Factor Analysis of the 'Task Uncertainty' scale

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2,5609	25,6090	25,6090
2	1,3568	13,5678	39,1768
3	1,1403	11,4030	50,5799
4	,9309	9,3092	59,8891
5	,8312	8,3120	68,2011
6	,7871	7,8710	76,0721
7	,7212	7,2120	83,2841
8	,6922	6,9215	90,2056
9	,5313	5,3125	95,5182
10	,4482	4,4818	100,0000

Table E-4 : Factor Analysis of the 'Environmental Uncertainty' scale

Particularly with regard to the instrument used to measure the managerial performance-variable, a multiple linear regression model was constructed in order to assess the extent to which the overall effectiveness dimension significantly reflects the variation in managerial performance on each of the eight dimensions included in the scale. The results of this test are presented in the following tables.

Model	Independent Variables	Dependent Variable	Method [a]
1	Representing, Planning, Supervising, Investigating, Negotiating, Co-ordinating, Staffing, Evaluating	Overall Performance	Enter

a. All requested variables entered.

Table E-5 : The Multiple Linear Regression Model of Overall Managerial Performance

Model[b]	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,6565[a]	,4310	,4095	,5373

a. Predictors: (Constant), Representing, Planning, Supervising, Investigating, Negotiating, Co-ordinating, Staffing, Evaluating

b. Dependent Variable: Overall Performance

Table E-6 : Summary Statistics

Model[c]		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46,366	8	5,796	20,074	,000[a]
	Residual	61,209	212	,289		
	Total	107,575	220			

a. Predictors: (Constant), Representing, Planning, Supervising, Investigating, Negotiating, Co-ordinating, Staffing, Evaluating

c. Dependent Variable: Overall Performance

Table E-7 : ANalysis-Of-VAriance

Appendix F : BANK SIGMA - Summary Financial Data

Group Ten Year Financial Summary

Year ended 28th/29th February

	1990	1991	1992	1993†	1994	1995	1996	1997	1998	1999
	£ million									
Operating Profit before Provisions	297	335	393	488	569	650*	660†*	826	954†*	1,097
Profit before Tax	**194**	**134**	**141**	**125**	**269**	**450**	**545**	**664**	**742**	1,012
Profit attributable to Proprietors	117	85	89	77	161	280	332	404	511	557
Ordinary Dividends	34	39	50	53	59	68	81	98	120	144
Preference Dividends	9	13	19	19	19	19	28	28	40	37
Retained Profit	74	33	20	5	83	193	223	278	351	376
Called Up Share Capital										
Ordinary	189	191	287	289	291	293	296	299	307	310
Preference	100	200	200	200	200	200	300	300	400	400
Reserves	607	658	774	766	813	1,011	1,155	1,444	1,821	2,261
Proprietors' Funds	**896**	**1,049**	**1,261**	**1,255**	**1,304**	**1,504**	**1,751**	**2,043**	**2,528**	2,971
Minority Interests	6	7	4	4	1	8	125	131	123	133
Subordinated Liabilities										
Dated Loan Capital	301	357	555	610	579	672	894	815	716	682
Undated Loan Capital	327	287	312	387	570	547	763	929	1,071	1,088
Capital Resources	1,530	1,700	2,132	2,256	2,460	2,731	3,533	3,918	4,438	4,874
Total Assets	18,394	22,095	24,741	29,013	30,748	34,104	44,099	47,275	54,697	59,796
Total Deposits	16,376	19,899	22,064							
Deposits by banks, customers and debt securities in issue				25,247	26,693	29,637	38,400	40,872	47,514	51,422
Total Advances	14,364	17,269	18,996							
Loans and advances to banks and customers				24,828	25,343	27,733	36,153	40,230	47,625	51,395
	Pence per Ordinary Stock unit									
Earnings (basic)**	**11.4**	**7.6**	**6.4**	**5.0**	**12.2**	**22.3**	**25.8**	**31.6**	**38.9**	42.1
Dividends**	**3.6**	**4.1**	**4.4**	**4.6**	**5.1**	**5.8**	**6.9**	**8.2**	**9.9**	11.6
Net Assets**	**83.9**	**88.6**	**92.4**	**91.2**	**94.8**	**111.3**	**122.6**	**145.6**	**173.4**	207.4
	Average Number									
Staff										
UK	15,050	15,945	16,140	15,720	15,245	15,110	15,775	15,905	16,807	18,060
Overseas	150	155	160	1,430	1,454	1,510	2,331	5,195	5,247	4,644

From 1993, as a result of the modifications to the Group Accounts consequent on the enactment of the Companies Act 1985 (Bank Accounts) Regulations 1991, certain items are not directly comparable with earlier years.

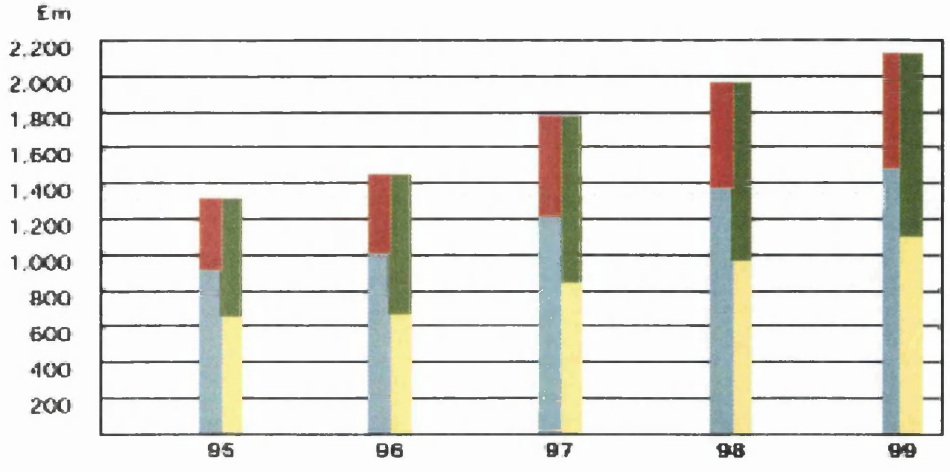
† Restated.

* Includes non-recurring profits (net of losses) of £14.0 million in 1996 and £37.6 million in 1995.

* Before write-down of leases of £37.1 million.

** Adjusted for the capitalisation and rights issues in 1991.

Historic Trends



	£m	£m	£m	£m	£m
Net interest income	899.8	997.7	1,218.0	1,365.5*	1,529.4
Non-interest income	394.4	430.9	544.2	568.7	623.1
Total income	1,294.2	1,428.6	1,762.2	1,934.2	2,152.5
Operating expenses	644.2	768.8	925.2	980.4	1,056.9
Revaluation deficit			11.5		
Operating profit (before bad debt provisions)	650.0	659.8	825.5	953.8*	1,096.6
Ratios	%	%	%	%	%
Cost: Income	49.8	53.8	52.5	50.7	49.1
Non-interest income to expenses	61.2	56.0	58.8	58.0	59.0
Tier 1	6.1	6.1	6.4	6.8	6.8
Total capital	11.4	11.8	11.8	11.7	11.1

**before write-down of leases*

Appendix G : Comparative Analysis - BANK SIGMA vs. Top 5 UK Competitors

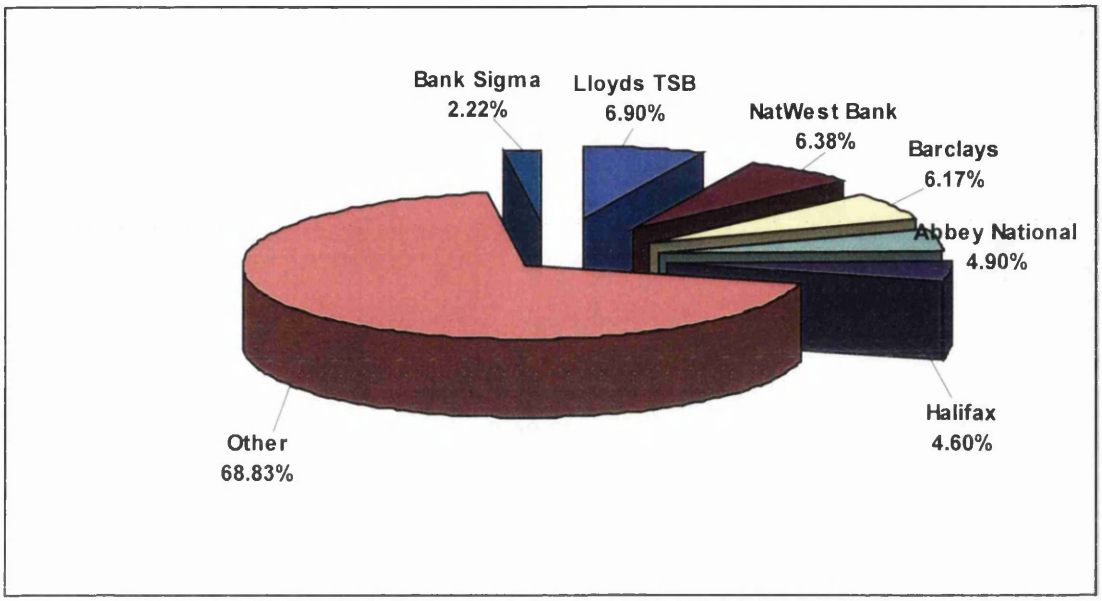
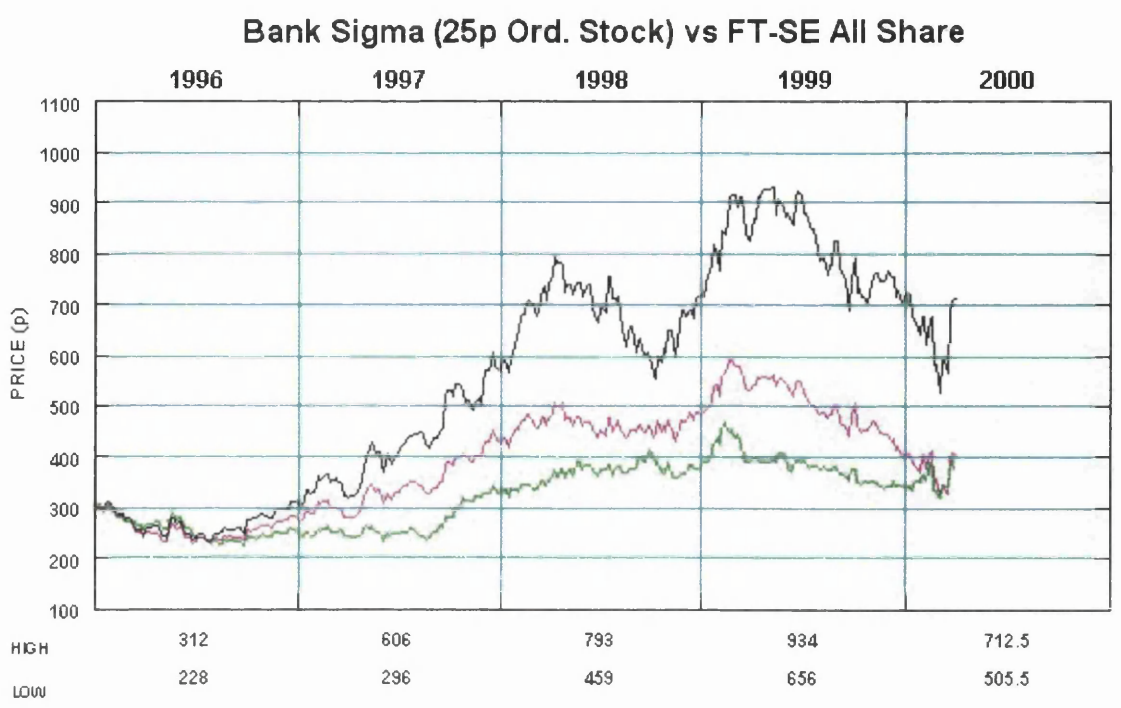


Figure G-1 : BANK SIGMA vs. Top 5 Participants - U.K. Market Share Analysis (1998)

Companies	Lloyds TSB		Nat West		Barclays		Abbey National		Halifax		Bank Sigma	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998
Ratios												
PROFITABILITY												
Profit Margin %	23.0	20.9	7.5	15.1	13.2	14.4	14.7	14.4	19.7	17.3	16.1	15.9
Return on Equity %	46.4	34.1	8.8	21.5	15.5	17.6	21.9	22.5	15.8	16.2	25.9	27.0
EFFICIENCY												
Turnover / Assets	0.09	0.09	0.07	0.08	0.06	0.06	0.06	0.06	0.06	0.07	0.09	0.08
PERFORMANCE												
Earnings / Equity %	37.3	28.4	8.0	19.0	14.8	16.8	18.0	17.3	15.1	16.4	20.2	18.7
Cap. Employed / Equity	20.1	17.7	18.9	18.0	24.4	22.0	27.6	28.9	15.2	16.8	20.7	19.1
Tax charge / PBT %	25.7	29.3	31.7	23.4	31.6	28.1	25.5	30.4	33.1	31.3	28.4	42.6
PBIT / Cap. Employed %	2.8	2.6	1.0	1.7	1.5	2.0	1.1	1.1	1.6	1.6	1.7	2.0
FINANCIAL STRUCTURE												
Total debt / Equity %	259.6	212.4	287.2	243.7	84.3	87.5	874.7	856.7	221.0	255.2	534.5	621.6
Net debt / Equity %	49.0	19.0	-108.4	-112.0	-533.0	-468.5	537.6	519.8	192.9	217.9	429.3	554.8
Long debt / Total debt %	27.7	28.8	31.1	35.3	20.8	30.4	40.0	39.6	41.0	36.8	32.8	27.6
Interest cover ratio	11.0	10.4	2.9	5.6	2.5	2.3	7.6	8.1	10.9	10.9	6.9	8.3

Source : Worldscope / Extel Database

Table G-1 : BANK SIGMA vs. Top 5 Participants - Comparative Ratio Analysis (1997/1998)



Legend

——— = Share Price (adjusted where necessary for capital changes)

——— = Share Price movement relative to the FT-SE All Share Index

——— = Share Price Movement relative to the company's Sector

Source : hemscott.NET Limited 2000

Figure G-2 : BANK SIGMA - Share Price Graph (1996-2000)

Appendix H : Test for Bias from Inexperience

Table H-1 below presents the comparison of means t-test and its non-parametric alternative Mann-Whitney test that were run between the group of the less experienced managers (position experience < 1 year, n = 42) and the rest of the sample (position experience > 1 year, n = 183) for all the variables measured in the study. The tests were performed to assess the possibility that the inclusion of the less experienced managers in the sample introduced any systematic bias in the analysis conducted and in the results obtained, however, to the extent that no statistically significant differences are identified in any of the study's variables between the two groups, such a possibility has to be ruled out.

	Mean score (Standard Deviation)		Mean Difference	t	Sig. of t (2-tailed)	Mann-Whitney U	Asymp. Sig. of Mann-Whitney U (2-tailed)
	Experienced Managers (n = 183)	Inexperienced Managers (n = 42)					
E-->P Expectancy	5,24 (1,36)	5,14 (1,66)	,098	,401	,689	3837,500	,988
P-->EP Expectancy	4,11 (1,45)	4,29 (1,58)	-,176	-,698	,486	3415,000	,250
EP-->ER Expectancy	4,09 (1,22)	4,13 (1,18)	-,040	-,602	,510	3481,000	,313
Value of Extrinsic Rewards	5,56 (0,79)	5,60 (1,03)	-,038	-,266	,791	3624,000	,564
Value of Intrinsic Rewards	5,89 (0,65)	5,97 (0,61)	-,081	-,731	,466	3454,000	,629
Motivation	5,95 (0,95)	6,10 (0,79)	-,150	-,951	,342	3570,500	,444
Performance	5,59 (0,70)	5,76 (0,66)	-,172	-,743	,350	3525,500	,422
External Environmental Uncertainty	4,82 (0,84)	4,84 (1,05)	-,024	-,161	,873	3703,500	,714
Task Uncertainty	4,49 (1,03)	4,67 (1,20)	-,173	-,644	,442	3513,500	,343

Table H-1 : Analysis of bias from inexperience

Appendix I : Test for Bias from the Uneven Distribution of Subjects in the Sample

Table I-1 below presents the results of the tests performed to assess the potential bias from the large number of directors in the sample (see Table 6-1 : Segmentation of Sample over Product / Functional Areas & Hierarchical Roles, Chapter 6). Neither the t-tests nor the (non-parametric equivalent) Mann-Whitney tests that were run between the group of the directors (n = 94) and the rest of the sample (n = 131) reveal any significant differences in any of study's variables, a result that is taken as an indication that no particular bias has been introduced in the collected data from the large number of directors in the given sample.

	Mean score (Standard Deviation)		Mean Difference	t	Sig. of t (2-tailed)	Mann-Whitney U	Asymp. Sig. of Mann-Whitney U (2-tailed)
	Directors (n = 94)	Other Managers (n = 131)					
E-->P Expectancy	5,17 (1,43)	5,26 (1,42)	-,089	-,465	,642	5948,500	,655
P-->EP Expectancy	4,15 (1,40)	4,14 (1,53)	,012	,058	,954	6105,000	,912
EP-->ER Expectancy	4,24 (1,23)	4,15 (1,23)	,087	,521	,603	5841,500	,512
Value of Extrinsic Rewards	5,61 (0,87)	5,54 (0,82)	,074	,648	,518	5843,500	,514
Value of Intrinsic Rewards	5,95 (0,60)	5,87 (0,67)	,078	,891	,374	5460,500	,441
Motivation	5,97 (0,91)	5,98 (0,93)	-,009	-,072	,942	6088,000	,878
Performance	5,66 (0,70)	5,68 (0,69)	-,017	-,156	,847	5994,500	,778
External Environmental Uncertainty	4,86 (0,93)	4,79 (0,85)	,072	,602	,548	5727,500	,372
Task Uncertainty	4,53 (1,07)	4,59 (1,08)	-,053	-,368	,713	5914,500	,614

Table I-1 : Analysis of bias from uneven distribution of subjects

Appendix J : The Company's Reward Package

In this appendix, we provide additional information on the company's reward package. On the basis of the managers' perceptions as they were reported in the questionnaire, Figure J-1 and Tables J-1 and J-2 below present descriptive statistics about the popularity, perceived value and perceived dependency of the extrinsic rewards that are distributed by the organisation, through the formal PMERS, to its appointed managerial staff.

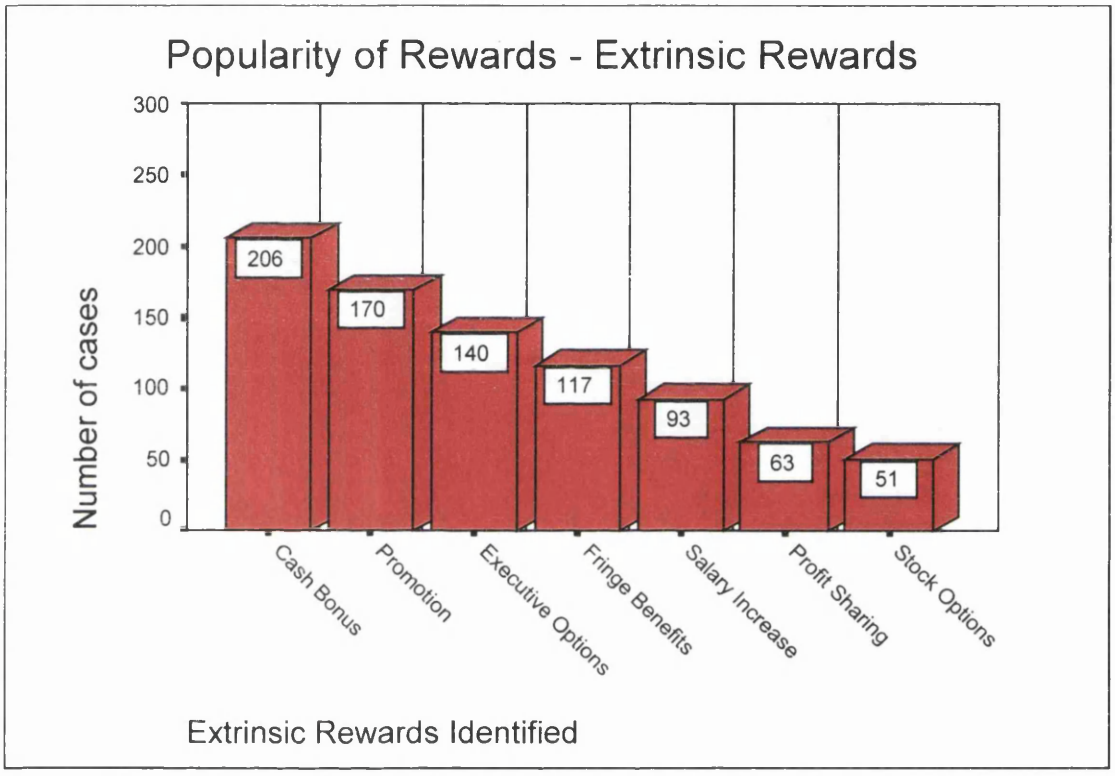


Figure J-1 : Most frequently mentioned Extrinsic Rewards

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Value of Profit Sharing	63	4,00	7,00	6,11	,84	-,036
Value of Promotion	170	3,00	7,00	5,92	1,04	-,011
Value of Salary Increase	93	3,00	7,00	5,89	1,12	-,344
Value of Executive Stock Options	140	2,00	7,00	5,84	1,05	,472
Value of Stock Options	51	1,00	7,00	5,69	1,26	3,576
Value of Cash Bonus	206	2,00	7,00	5,67	1,13	-,130
Value of Company Benefits	117	1,00	7,00	4,56	1,25	,339
Valid N (listwise)	0					

Table J-1 : Descriptive Statistics - Value of Extrinsic Rewards

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
EP-->Cash Bonus Expectancy	206	1,00	7,00	5,26	1,64	-,323
EP-->Salary Increase Expectancy	93	1,00	7,00	4,97	1,58	-,449
EP-->Promotion Expectancy	170	1,00	7,00	4,86	1,36	-,153
EP-->Executive Stock Options Expectancy	140	1,00	7,00	4,64	1,71	-1,133
EP-->Profit Sharing Expectancy	63	1,00	7,00	2,48	1,82	-,036
EP-->Fringe Benefits Expectancy	117	1,00	7,00	2,31	1,59	,845
EP-->Stock Options Expectancy	50	1,00	7,00	1,66	1,12	11,235
Valid N (listwise)	0					

Table J-2 : Descriptive Statistics - Dependency of Extrinsic Rewards

Appendix K : The Intrinsic Rewards Identified

The descriptive analysis that follows provides statistics on the intrinsic rewards that the 225 managers in the sample identified with their jobs in the organisation. Specific details about the type and the perceived value of the most popular intrinsic rewards, as these were designated by the managers themselves, are presented in Figure K-1 and Table K-1 below. Just as with the extrinsic rewards in Appendix J, since the majority of the respondents reported more than one intrinsic reward associated with their job, the total number of intrinsic rewards identified exceeds the sample size.

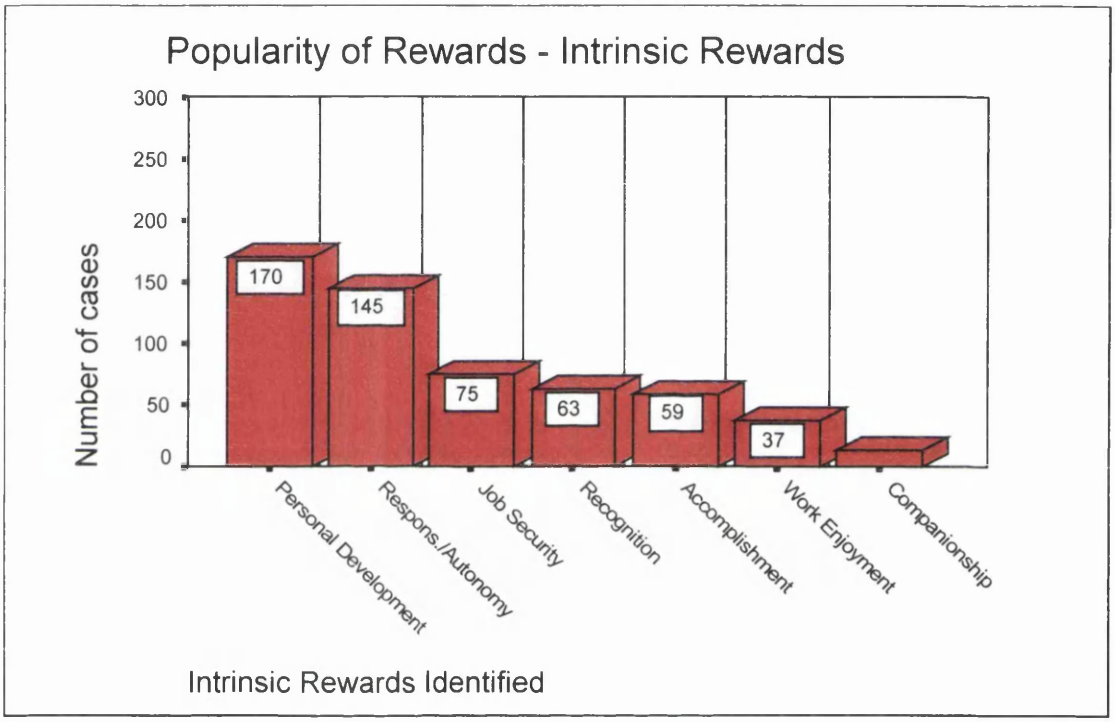


Figure K-1 : Most frequently mentioned Intrinsic Rewards

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Value of Work Enjoyment	37	4,00	7,00	6,41	,76	1,401
Value of Recognition	63	4,00	7,00	6,21	,81	,077
Value of Accomplishment	59	4,00	7,00	6,19	,88	-,048
Value of Responsibility / Autonom	145	4,00	7,00	5,90	,82	-,444
Value of Personal Development	170	3,00	7,00	5,89	,92	,477
Value of Job Security	75	2,00	7,00	5,76	1,36	,192
Value of Companionship	14	3,00	7,00	5,64	1,28	1,132
Valid N (listwise)	0					

Table K-1 : Descriptive Statistics - Value of Intrinsic Rewards

Appendix L : Additional Correlation Analysis - The Motivation-Performance Relationship

Tables L-1 and L-2 below present the results of the additional - parametric and non-parametric - correlation analysis conducted to explore further the relationship between managerial motivation and managerial performance. As shown below, both the parametric and the non-parametric correlation coefficients calculated, all unanimously indicate a positive and statistically significant (at the 99% level) relationship between the manager's motivation and his / her performance on each of the eight separate sub-dimensions of managerial activity (planning, investigating, co-ordinating, evaluating, supervising, staffing, negotiating, and representing) identified and measured in this study.

Matrix of Pearson's r Correlations

	Motivation	Overall Performance	Planning	Investigating	Co-ordinating	Evaluating	Supervising	Staffing	Negotiating	Representing
Motivation	1,000									
Overall Performance	,506**	1,000								
Planning	,241**	,405**	1,000							
Investigating	,201**	,344**	,125*	1,000						
Co-ordinating	,257**	,320**	,376**	,062	1,000					
Evaluating	,167**	,341**	-,035	,558**	-,001	1,000				
Supervising	,247**	,201**	,104	-,122*	,238**	-,033	1,000			
Staffing	,269**	,188**	,163**	-,093	,254**	-,049	,503**	1,000		
Negotiating	,334**	,354**	,023	,245**	,180**	,336**	,160**	,107	1,000	
Representing	,358**	,428**	,081	,211**	,211**	,322**	,205**	,164**	,355**	1,000

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Table L-1 : Pearson's r Correlations - The Motivation-Performance Relationship

Matrix of Spearman Correlations

	Motivation	Overall Performance	Planning	Investigating	Co-ordinating	Evaluating	Supervising	Staffing	Negotiating	Representing
Motivation	1,000									
Overall Performance	,445**	1,000								
Planning	,254**	,423**	1,000							
Investigating	,198**	,323**	,071	1,000						
Co-ordinating	,194**	,316**	,367**	,070	1,000					
Evaluating	,155**	,344**	-,043	,544**	,000	1,000				
Supervising	,238**	,180**	,130*	-,116*	,234**	-,033	1,000			
Staffing	,280**	,186**	,207**	-,093	,274**	-,052	,465**	1,000		
Negotiating	,279**	,315**	,020	,258**	,179**	,307**	,145*	,100	1,000	
Representing	,293**	,400**	,067	,211**	,227**	,309**	,214**	,179**	,331**	1,000

**. Correlation is significant at the .01 level (1-tailed).

*. Correlation is significant at the .05 level (1-tailed).

Table L-2 : Spearman Correlations - The Motivation-Performance Relationship

Appendix M : Secondary Analysis - Group Comparisons for latent Bivariate Relationships

This appendix presents the summary statistics for all the sub-samples used in the secondary analysis that was conducted in order to bring to light further bivariate relationships and trends between the variables of the study. Tables M-1 through M-9 below report full sets of descriptive statistics for each of the sub-samples formed and used in the group comparisons that were attempted.

Controlling for Task Uncertainty

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	46	,50	15,00	3,07	2,90	5,704
E-->P Expectancy	46	2,00	7,00	5,35	1,37	-,482
P-->EP Expectancy	46	2,00	7,00	4,48	1,43	-,818
EP-->ER Expectancy	46	1,00	7,00	4,02	1,44	-,585
Value of Extrinsic Rewards	46	2,50	7,00	5,55	1,00	,925
Value of Intrinsic Rewards	45	4,50	7,00	5,94	,67	-,304
Motivation	46	3,00	7,00	5,87	,98	1,556
Performance	46	3,00	7,00	5,61	,80	1,531
External Environmental Uncertainty	46	2,00	6,40	4,26	1,17	-1,000
Task Uncertainty	46	1,89	3,67	3,06	,49	-,446
Valid N (listwise)	45					

Table M-1 : Descriptive Statistics - Low Task Uncertainty Group

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	41	,50	5,00	1,68	1,19	,308
E-->P Expectancy	41	2,00	7,00	4,34	2,04	-1,731
P-->EP Expectancy	41	1,00	6,00	3,29	2,04	-1,650
EP-->ER Expectancy	41	2,00	7,00	4,68	1,34	-1,000
Value of Extrinsic Rewards	41	4,83	7,00	6,02	,69	-1,161
Value of Intrinsic Rewards	40	4,50	7,00	6,05	,61	-,085
Motivation	41	3,00	7,00	6,00	,97	1,460
Performance	41	4,00	7,00	5,76	,62	,673
External Environmental Uncertainty	41	3,50	7,00	5,72	,78	,255
Task Uncertainty	41	5,56	7,00	6,12	,43	-,930
Valid N (listwise)	40					

Table M-2 : Descriptive Statistics - High Task Uncertainty Group

Controlling for Position in the Organisational Hierarchy

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	94	,50	33,00	2,78	4,29	28,942
E-->P Expectancy	94	2,00	7,00	5,17	1,43	,180
P-->EP Expectancy	94	1,00	7,00	4,15	1,40	,050
EP-->ER Expectancy	94	1,50	7,00	4,24	1,23	-,689
Value of Extrinsic Rewards	94	2,50	7,00	5,61	,87	,816
Value of Intrinsic Rewards	93	4,50	7,00	5,95	,60	-,361
Motivation	94	4,00	7,00	5,97	,91	-,299
Performance	94	4,00	7,00	5,54	,70	-,071
External Environmental Uncertainty	94	2,20	7,00	4,86	,93	,755
Task Uncertainty	94	2,00	6,89	4,53	1,07	-,298
Valid N (listwise)	93					

Table M-3 : Descriptive Statistics - Directors

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	32	,50	25,00	3,95	5,52	9,565
E-->P Expectancy	32	2,00	7,00	5,59	1,29	2,021
P-->EP Expectancy	32	1,00	7,00	4,50	1,46	,236
EP-->ER Expectancy	32	2,00	6,00	4,13	1,04	-,258
Value of Extrinsic Rewards	32	4,00	7,00	5,53	,67	,302
Value of Intrinsic Rewards	30	4,00	7,00	5,90	,71	,784
Motivation	32	3,00	7,00	5,81	1,09	-,051
Performance	32	3,00	7,00	5,56	,88	3,151
External Environmental Uncertainty	32	2,70	6,20	4,88	,74	1,463
Task Uncertainty	32	1,89	7,00	4,74	1,11	,978
Valid N (listwise)	30					

Table M-4 : Descriptive Statistics - Senior Managers

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	56	,50	23,00	3,13	3,95	12,549
E-->P Expectancy	56	2,00	7,00	5,29	1,45	-,101
P-->EP Expectancy	56	1,00	7,00	4,18	1,55	-,609
EP-->ER Expectancy	56	2,20	7,00	4,17	1,28	-,311
Value of Extrinsic Rewards	56	2,33	7,00	5,42	,95	,917
Value of Intrinsic Rewards	54	4,50	7,00	5,82	,67	-,650
Motivation	56	3,00	7,00	6,12	,88	2,273
Performance	56	4,00	7,00	5,77	,66	-,014
External Environmental Uncertainty	56	2,30	6,90	4,68	,95	,242
Task Uncertainty	56	2,33	6,89	4,44	1,09	-,433
Valid N (listwise)	54					

Table M-5 : Descriptive Statistics - Associate Directors

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	43	,50	9,00	2,76	1,99	2,533
E-->P Expectancy	43	2,00	7,00	4,98	1,44	,041
P-->EP Expectancy	43	1,00	6,00	3,81	1,53	-,967
EP-->ER Expectancy	43	1,00	7,00	4,15	1,31	,196
Value of Extrinsic Rewards	43	4,00	7,00	5,70	,72	,027
Value of Intrinsic Rewards	41	4,67	7,00	5,91	,65	-,736
Motivation	43	3,00	7,00	5,91	,87	1,859
Performance	43	4,00	7,00	5,65	,57	,265
External Environmental Uncertainty	43	2,00	6,40	4,86	,80	3,052
Task Uncertainty	43	2,33	6,78	4,65	1,03	-,263
Valid N (listwise)	41					

Table M-6 : Descriptive Statistics - Managers

Controlling for Motivational Orientation

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	23	,50	8,00	1,87	1,69	7,180
E-->P Expectancy	23	4,00	7,00	5,48	1,04	-1,085
P-->EP Expectancy	23	2,00	7,00	4,48	1,41	-,575
EP-->ER Expectancy	23	1,33	6,33	4,40	1,09	1,667
Value of Extrinsic Rewards	23	5,00	7,00	6,26	,62	-,972
Value of Intrinsic Rewards	16	4,00	5,75	5,03	,49	-,262
Motivation	23	3,00	7,00	5,78	1,13	,158
Performance	23	4,00	7,00	5,78	,74	1,789
External Environmental Uncertainty	23	2,20	6,40	4,91	,88	3,311
Task Uncertainty	23	2,56	6,63	4,61	1,07	-,583
Valid N (listwise)	16					

Table M-7 : Descriptive Statistics - Extrinsically Motivated Group

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	54	,50	17,00	2,44	3,00	15,083
E-->P Expectancy	54	2,00	7,00	5,35	1,18	1,742
P-->EP Expectancy	54	1,00	6,00	4,37	1,26	,280
EP-->ER Expectancy	54	2,00	7,00	4,10	1,15	-,006
Value of Extrinsic Rewards	54	2,33	5,80	4,67	,73	1,662
Value of Intrinsic Rewards	54	4,50	7,00	6,30	,54	1,244
Motivation	54	4,00	7,00	6,06	,81	-,814
Performance	54	4,00	7,00	5,69	,58	1,123
External Environmental Uncertainty	54	2,60	6,90	4,60	,87	,650
Task Uncertainty	54	2,22	6,89	4,50	1,10	,090
Valid N (listwise)	54					

Table M-8 : Descriptive Statistics - Intrinsically Motivated Group

	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis
Position Experience	148	,50	33,00	3,42	4,60	17,981
E-->P Expectancy	148	2,00	7,00	5,14	1,54	-,317
P-->EP Expectancy	148	1,00	7,00	4,01	1,55	-,591
EP-->ER Expectancy	148	1,00	7,00	4,19	1,28	-,549
Value of Extrinsic Rewards	148	4,33	7,00	5,79	,64	-,628
Value of Intrinsic Rewards	148	4,50	7,00	5,85	,58	-,379
Motivation	148	3,00	7,00	5,97	,93	,704
Performance	148	3,00	7,00	5,57	,73	1,203
External Environmental Uncertainty	148	2,00	7,00	4,88	,88	,892
Task Uncertainty	148	1,89	7,00	4,58	1,07	-,391
Valid N (listwise)	148					

Table M-9 : Descriptive Statistics - Intrinsically & Extrinsically Motivated Group

Appendix N : Secondary Analysis - Examining the Managers' Reward Preferences and Motivational Orientation

This appendix presents the analysis conducted to specifically examine the motivational orientation (extrinsic and / or intrinsic) and the reward preferences of the middle-level managers in the sample. The trend of the Chi-Square statistic and of its p-value in the tests reported in Tables N-1 through N-3 indicates a high probability of the majority of managers being motivated both by the extrinsic and by the intrinsic rewards that are available to them. Next, both the Friedman tests and the Kendall's W tests presented in Tables N-4 through N-9 provide evidence to show that managers tend to have significantly different preferences (perceived values) for the various rewards that they perceived to enjoy in the context of their job, irrespective of the way these rewards are classified (extrinsic vs. intrinsic rewards, hygiene vs. motivators rewards, short- vs. medium- vs. long-term effect rewards, etc.)

	Observed N	Expected N	Residual
Extrinsically OR Intrinsically Motivated Group	77	112,5	-35,5
Extrinsically AND Intrinsically Motivated Group	148	112,5	35,5
Total	225		

Test Statistics

	Motivational Orientation
Chi-Square[a]	22,404
df	1
Asymp. Sig.	,000

a. 0 cells (,0%) have expected frequencies less than 5. The minimum expected cell frequency is 112,5.

Table N-1 : Chi-Square Test - Motivational Orientation (1:1 Expected Proportion)

	Observed N	Expected N	Residual
Extrinsically OR Intrinsically Motivated Group	77	90,0	-13,0
Extrinsically AND Intrinsically Motivated Group	148	135,0	13,0
Total	225		

Test Statistics

	Motivational Orientation
Chi-Square[a]	3,130
df	1
Asymp. Sig.	,077

a. 0 cells (,0%) have expected frequencies less than 5. The minimum expected cell frequency is 90,0.

Table N-2 : Chi-Square Test - Motivational Orientation (1:1.5 Expected Proportion)

	Observed N	Expected N	Residual
Extrinsically OR Intrinsically Motivated Group	77	75,0	2,0
Extrinsically AND Intrinsically Motivated Group	148	150,0	-2,0
Total	225		

Test Statistics

	Motivational Orientation
Chi-Square [a]	,080
df	1
Asymp. Sig.	,777

a. 0 cells (,0%) have expected frequencies less than 5. The minimum expected cell frequency is 75,0.

Table N-3 : Chi-Square Test - Motivational Orientation (1:2 Expected Proportion)

	Mean Rank
Value of Promotion	4,10
Value of Responsibility/Autonomy	3,88
Value of Cash Bonus	3,74
Value of Stock Options	3,62
Value of Personal Development	3,46
Value of Company Benefits	2,20

Test Statistics

N	25
Chi-Square [a]	20,938
Kendall's W [b]	,168
df	5
Asymp. Sig.	,001

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-4 : Friedman & Kendall's W Tests - Reward Preference (Most Popular Rewards)

	Mean Rank
Value of Extrinsic Rewards	1,39
Value of Intrinsic Rewards	1,61

Test Statistics

N	218
Chi-Square [a]	11,712
Kendall's W [b]	,054
df	1
Asymp. Sig.	,001

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-5 : Friedman & Kendall's W Tests - Reward Preference (Extrinsic vs. Intrinsic Rewards)

	Mean Rank
Value of Hygiene Rewards	1,32
Value of Motivators Rewards	1,68

Test Statistics

N	223
Chi-Square [a]	29,861
Kendall's W [b]	,134
df	1
Asymp. Sig.	,000

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-6 : Friedman & Kendall's W Tests - Reward Preference (Hygiene vs. Motivators Rewards)

	Mean Rank
Value of Self-Actualisation Rewards	3,91
Value of Growth Rewards	3,22
Value of Esteem Rewards	3,80
Value of Affiliation Rewards	4,33
Value of Safety Rewards	2,91
Value of Physiological Rewards	2,83

Test Statistics

N	23
Chi-Square [a]	14,170
Kendall's W [b]	,123
df	5
Asymp. Sig.	,015

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-7 : Friedman & Kendall's W Tests - Reward Preference (Hierarchy-of-Needs Rewards)

	Mean Rank
Value of Existence Rewards	1,65
Value of Relatedness Rewards	2,37
Value of Growth Rewards	1,98

Test Statistics

N	71
Chi-Square [a]	20,693
Kendall's W [b]	,146
df	2
Asymp. Sig.	,000

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-8 : Friedman & Kendall's W Tests - Reward Preference (Existence vs. Relatedness vs. Growth Rewards)

	Mean Rank
Value of Short-Term Effect Rewards	2,07
Value of Medium-Term Effect Rewards	1,76
Value of Long-Term Effect Rewards	2,18

Test Statistics

N	211
Chi-Square [a]	22,734
Kendall's W [b]	,054
df	2
Asymp. Sig.	,000

a. Friedman Test

b. Kendall's Coefficient of Concordance

Table N-9 : Friedman & Kendall's W Tests - Reward Preference (Short- vs. Medium- vs. Long-Term Effect Rewards)

Appendix O : Secondary Analysis - Multiple Linear Regression Modelling

The tables below present the results of the multivariate analysis conducted. Initially, Tables O-1 through O-3 provide information about the combinations of dependent and independent variables tested, as well as the summary statistics and the analysis-of-variance for each of the two multiple linear regression models constructed. Next, Tables O-4 and O-5 present the results of the partial regression and partial correlation analyses carried out.

Model	Independent Variables	Dependent Variable	Method[a]
1	Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV)	Motivation (M)	Enter
2	Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV), External Environmental Uncertainty (EU Task Uncertainty (TU)	Motivation (M)	Enter

a. All requested variables entered.

Table O-1 : The two Multiple Linear Regression Models

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,228[a]	,052	,029	,9091
2	,235[b]	,055	,024	,9118

a. Predictors: (Constant), Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV)

b. Predictors: (Constant), Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV), External Environmental Uncertainty (EU), Task Uncertainty (TU)

Table O-2 : Summary Statistics - Model 1 vs. Model 2

Model[c]		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9,566	5	1,913	2,315	,045[a]
	Residual	175,210	212	,826		
	Total	184,775	217			
2	Regression	10,199	7	1,457	1,753	,098[b]
	Residual	174,576	210	,831		
	Total	184,775	217			

a. Predictors: (Constant), Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV)

b. Predictors: (Constant), Value of Extrinsic Rewards (EV), E-->P Expectancy, P-->EP Expectancy, EP-->ER Expectancy, Value of Intrinsic Rewards (IV), External Environmental Uncertainty (EU), Task Uncertainty (TU)

c. Dependent Variable: Motivation (M)

Table O-3 : ANalysis-Of-VAriance - Model 1 vs. Model 2

Model[a]		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta		
1	(Constant)	3,583	,760		4,713	,000
	Value of Extrinsic Rewards (EV)	,116	,075	,107	1,544	,124
	E-->P Expectancy	,002	,056	,003	,030	,976
	P-->EP Expectancy	,033	,054	,053	,607	,545
	EP-->ER Expectancy	,056	,052	,074	1,063	,289
	Value of Intrinsic Rewards (IV)	,230	,098	,160	2,345	,020
2	(Constant)	3,332	,851		3,914	,000
	Value of Extrinsic Rewards (EV)	,110	,076	,101	1,441	,151
	E-->P Expectancy	,006	,056	,010	,112	,911
	P-->EP Expectancy	,044	,057	,070	,773	,441
	EP-->ER Expectancy	,050	,053	,066	,936	,351
	Value of Intrinsic Rewards (IV)	,226	,099	,157	2,291	,023
	External Environmental Uncertainty (EU)	,007	,093	,007	,076	,939
	Task Uncertainty (TU)	,051	,072	,060	,710	,478

a. Dependent Variable: Motivation

Table O-4 : Partial Regression Analysis - Model 1 vs. Model 2

Model[a]		Coefficients	df	Sig.
1	Value of Extrinsic Rewards (EV)	,106	212	,062
	E-->P Expectancy	,002	212	,488
	P-->EP Expectancy	,042	212	,272
	EP-->ER Expectancy	,073	212	,145
	Value of Intrinsic Rewards (IV)	,159	212	,010
2	Value of Extrinsic Rewards (EV)	,099	210	,076
	E-->P Expectancy	,008	210	,455
	P-->EP Expectancy	,053	210	,220
	EP-->ER Expectancy	,064	210	,175
	Value of Intrinsic Rewards (IV)	,156	210	,011
	External Environmental Uncertainty (EU)	,005	210	,470
	Task Uncertainty (TU)	,049	210	,239

a. Dependent Variable: Motivation (M)

Table O-5 : Partial Correlation Analysis - Model 1 vs. Model 2

Appendix P : Secondary Analysis - Scatter-plot Matrix of Bivariate Relationships

Figure P-1 below presents a scatter-plot matrix of the variables identified in the research. This matrix displays separately the relationships between all the study's variables, dependent, independent and intervening. Of particular interest is the last row of the matrix, where the relationships between managerial motivation (M) and all the other variables (EV, E P, P EP, EP ER, IV, EU, and TU) are shown.

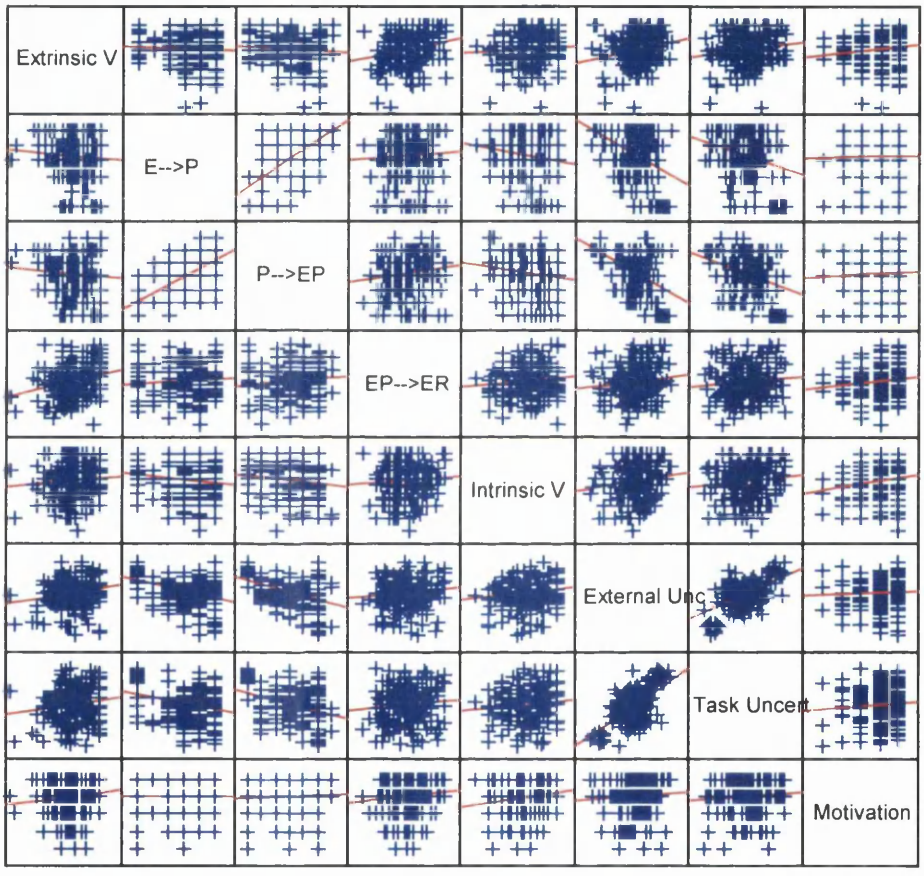


Figure P-1 : Scatter-plot Matrix - Relationships between Variables

Appendix Q : Test for Bias from Non-Response

Table Q-1 below presents the results of the test performed to assess the potential bias from non-response. The test was conducted as follows. First, for each questionnaire the date of both distribution and return were recorded. Second, the total sample of respondents was split at the median response time into early (below the median) and late (above the median) respondents. Finally, a comparison of means t-test, and its non-parametric equivalent, the Mann-Whitney test, were run for differences between the two groups for each of the study's designated variables. As shown in Table Q-1, no statistically significant differences in the mean scores between the early and late responses were found, a result that suggests that little or no response bias exists in the present sample.

	Mean score (Standard Deviation)						
	Early Respondents (n = 121)	Late Respondents (n = 104)	Mean Difference		Sig. of t (2-tailed)	Mann-Whitney U	Asymp. Sig. of Mann-Whitney U (2-tailed)
E-->P Expectancy	5,12 (1,45)	5,34 (1,38)	-,213	-1,121	,263	5770,500	,269
P-->EP Expectancy	4,09 (1,51)	4,20 (1,44)	-,111	-,562	,575	6098,000	,684
EP-->ER Expectancy	4,15 (1,27)	4,24 (1,18)	-,097	-,591	,555	5992,500	,538
Value of Extrinsic Rewards	5,51 (0,87)	5,63 (0,81)	-,116	-1,035	,302	5708,500	,230
Value of Intrinsic Rewards	5,95 (0,65)	5,85 (0,63)	,095	1,085	,279	5719,500	,250
Motivation	5,92 (0,97)	6,04 (0,86)	-,121	-,984	,326	5954,000	,458
Performance	5,68 (0,67)	5,56 (0,72)	,120	1,089	,299	5817,500	,268
External Environmental Uncertainty	4,87 (0,92)	4,77 (0,84)	,098	,834	,405	5860,500	,343
Task Uncertainty	4,54 (1,13)	4,59 (1,01)	-,041	-,288	,774	6131,500	,741

Table Q-1 : Analysis of bias from non-response

Bibliography

- **Abernathy, W.B.** (1998), "A War Against Wages", Security Management, Vol. 42, No. 9, September, pp. 35-39.

- **Abernethy, M.A. - Chua, W.F. - Luckett, P.F. - Selto, F.H.** (1999), "Research in Managerial Accounting : Learning from Others' Experiences", Accounting and Finance, Vol. 39, pp. 1-27.

- **Abernethy, M.A. - Stoelwinder, J.** (1995), "Budget Use, Task Uncertainty, System Goal Orientation and Sub-Unit Performance : A Test of the 'Fit' Hypothesis in Not-for-Profit Hospitals", Accounting, Organizations and Society, Vol. 6, No. 2, pp. 105-129.

- **Adams, J.S.** (1963), "Toward an Understanding of Inequity", Journal of Abnormal and Social Psychology, Vol. 67, November, pp. 422-436.

- **Adams, J.S.** (1965), "Inequity in Social Exchanges", in Berkowitz, L. (Edition), "Advances in Experimental Social Psychology", Vol. 2, pp. 267-300, New York : Academic Press.

- **Akerlof, G.A. - Yellen, J.L.** (1986), "Efficiency Wage Models and the Labor Market", Cambridge : Cambridge University Press.

- **Alchian, A.A. - Demsetz, H.** (1972), "Production, Information Costs, and Economic Organization", American Economic Review, Vol. 62, December, pp. 777-795.

- **Alderfer, C.P.** (1969), "A New Theory of Human Needs", Organisational Behaviour and Human Performance, Vol. 4, pp. 142-175.

- **Alderfer, C.P.** (1972), "Existence, Relatedness and Growth", New York : Free Press.

- **Alreck, P.L. - Settle, R.B.** (1985), "The Survey Research Handbook", Homewood, IL. : Irwin.

- **Amabile, T.M.** (1979), "Effects of External Evaluation on Artistic Creativity", Journal of Personality and Social Psychology, Vol. 37, pp. 221-233.

- **Amabile, T.M.** (1983), "The Social Psychology of Creativity", New York : Springer-Verlag.

- **American Accounting Association** (1971), "Report of the Committee on Non-Financial Measures of Effectiveness", The Accounting Review, Vol. 46 (Supplement), pp. 165-211.

- **Amey, L.R. - Egginton, D.A.** (1973), "Management Accounting : A Conceptual Approach", Harlow, Essex : Longman.

- **Amigioni, F.** (1978), "Planning Management Control Systems", Journal of Business Finance & Accounting, pp. 279-292.

- **Andrews, K.R.** (1973), "The Concept of Corporate Strategy", in Christensen, C.R. - Andrews, K.R. - Bower, J.L. (Edition), "Business Policy : Text and Cases", 3rd Edition, pp. 107-120, Homewood, Illinois : Richard D. Irwin, Inc.

- **Angyal, A.** (1941), "Foundations of a Science of Personality", Cambridge, MA : Harvard University Press.

- **Ansari, S.** (1977), "An Integrated Approach to Control Systems Design", Accounting, Organizations and Society, pp. 101-112.

- **Ansari, S.** (1979), "Towards an Open Systems Approach to Budgeting", Accounting, Organizations and Society, pp. 149-161.

- **Anthony, R.N. - Dearden, J. - Govindarajan, V.** (1992), "Management Control Systems", 7th Edition, Boston : Irwin.

- **Anthony, R.N. - Govindarajan, V.** (1998), "Management Control Systems", Boston : Irwin / McGraw-Hill.

- **Anthony, R.N.** (1988), "The Management Control Function", Boston : Harvard Business School Press.

- **Argyris, C.** (1952), "The Impact of Budgets on People", New York, Ithaca: The Controllership Foundation.

- **Argyris, C.** (1964), "Integrating the Individual and the Organization", New York : Wiley.

- **Argyris, C.** (1971a), "Management and Organizational Development : The Path from X. A. to Y. B.", New York : McGraw-Hill.

- **Argyris, C.** (1971b), "Management Information Systems : The Challenge to Rationality", Management Science, Vol. 17, pp. 275-292.

- **Argyris, C.** (1990), "The Dilemma of Implementing Controls : The Case of Managerial Accounting", Accounting, Organizations and Society, Vol. 15, No. 6, pp. 503-511.

- **Armstrong, M. - Murlis, H.** (1988), "Reward Management : A Handbook of Salary Administration", London : Kogan Page Ltd.

- **Atkinson, J.W.** (1958), "Motives in Fantasy, Action, and Society", New York : Van Nostrand.

- **Atkinson, J.W.** (1964), "An Introduction to Motivation", Princeton, New Jersey : Van Nostrand.

- **Bagozzi, R.P. - Youjae, Y. - Phillips, L.W.** (1991), "Assessing Construct Validity in Organizational Research", Administrative Science Quarterly, pp. 421-458.

- **Baiman, S.** (1982), "Agency Research in Managerial Accounting : A Survey", Journal of Accounting Literature, Vol. 1, pp. 154-213.

- **Baiman, S.** (1990), "Agency Research in Managerial Accounting : A Second Look", Accounting, Organizations and Society, Vol. 15, No. 4, pp. 341-371.

- **Banbury, J. - Nahapiet, J.E.** (1979), "Towards a Framework for the Study of the Antecedents and Consequences of Information Systems in Organizations", Accounting, Organizations and Society, pp. 163-177.

- **Barnard, C.** (1938), "The Function of the Executive", Cambridge, MA : Harvard University Press.

- **Bass, B.M. - Burger, P.C.** (1979), "Assessment of Managers : An International Comparison", New York : Free Press.

- **Baumes, C.G.** (1963), "Allocating Corporate Expenses", Business Policy Study No.108, The Conference Board.

- **Baumler, J.V.** (1971), "Defined Criteria of Performance in Organizational Control", Administrative Science Quarterly, September, pp. 340-349.

- **Becker, G.S.** (1976), "The Economic Approach to Human Behavior", Chicago : Chicago University Press.

- **Becker, G.S.** (1993), "Nobel Lecture : The Economic Way of Looking at Behaviour", Journal of Political Economy, Vol. 101, pp. 385-409.

- **Becker, S.W. - Gordon, G.** (1966), "An Entrepreneurial Theory of Formal Organizations", Administrative Science Quarterly, December, pp. 315-344.

- **Becker, S.W. - Green, D.** (1962), "Budgeting and Employee Behaviour", Journal of Business, Vol. 35, No. 4, October, pp. 392-402.

- **Belcher, D.W.** (1980), "Pay and Performance", Compensation Review, Vol.12, No.3, pp. 14-20.

- **Berliner, J.S.** (1961), "The Situation of Plant Managers", in Inkeles, A. - Geiger, K. (Edition), "Soviet Society : A Book of Readings", Boston : Houghton Mifflin.

- **Berry, L.M. - Houston, J.P.** (1993), "Psychology at Work : An Introduction to Industrial and Organizational Psychology", Madison, Wisconsin : Brown & Benchmark Publishers.

- **Birnberg, J.G. - Shields, M.D. - Young, S.M.** (1990), "The Case for Multiple Methods in Empirical Management Accounting Research (With an Illustration from Budget Setting)", Journal of Management Accounting Research, Fall, pp. 33-66.

- **Birnberg, J.G. - Turpolec, L. - Young, S.M.** (1983), "The Organizational Context of Accounting", Accounting, Organizations and Society, Vol. 8, pp. 111-130.

- **Blackman, T.** (1999), "Trading in Options", People Management, Vol.5, No.9, May 6, pp. 42-46.

- **Blau, P.M.** (1955), "The Dynamics of Bureaucracy", University of Chicago Press.

- **Bottger, P.C. - Hirst, M.K.** (1986), "Budgetary Processes and Job Stress", Working Paper No. 86-034, Australian Graduate School of Management, University of New South Wales.

- **Brazeal, D.V.** (1996), "Managing an Entrepreneurial Organizational Environment : A Discriminant Analysis of Organizational and Individual Differences Between Autonomous Unit Managers and Department Managers", Journal of Business Research, Vol. 35, No. 1, pp. 55-67.

- **Briers, M. - Hirst, M.K.** (1990), "The Role of Budgetary Information in Performance Evaluation", Accounting, Organizations and Society, Vol. 15, No. 4, pp. 373-398.

- **British Institute of Management (BIM)** (1974), "Profit-Centre Accounting : The Absorption of Central Overhead Costs", Management Survey Report No. 21.

- **Brownell, P. - Dunk, A.S.** (1991), "Task Uncertainty and its Interactions with Budgetary Participation and Budget Emphasis : Some Methodological Issues and Empirical Investigation", Accounting, Organizations and Society, Vol. 16, No. 8, pp. 693-703.

- **Brownell, P. - Hirst, M.K.** (1986), "Reliance on Accounting Information, Budgetary Participation, and Task Uncertainty : Tests of a Three-Way Interaction", Journal of Accounting Research, Vol. 24, No. 2, Autumn, pp. 241-249.

- **Brownell, P. - McInnes, M.** (1986), "Budgetary Participation, Motivation, and Managerial Performance", The Accounting Review, Vol. LXI, No. 4, October, pp. 587-600.

- **Brownell, P.** (1981), "Participation in Budgeting, Locus of Control and Organisational Effectiveness", The Accounting Review, October, pp. 944-958.

- **Brownell, P.** (1982), "The Role of Accounting Data in Performance Evaluation, Budgetary Participation and Organizational Effectiveness", Journal of Accounting Research, Vol. 20, No.1, Spring, pp. 12-27.

- **Brownell, P.** (1985), "Budgetary Systems and the Control of Functionally Differentiated Organizational Activities", Journal of Accounting Research, Vol. 23, pp. 502-512.

- **Brownell, P.** (1987), "The Role of Accounting Information, Environment and Management Control in Multinational Organisations", Accounting and Finance, Vol. 27, pp. 1-16.

- **Brownell, P.** (1995), "Research Methods in Management Accounting", Coopers & Lybrand, Accounting Research Methodology, Monograph No. 2, Melbourne.

- **Bruns, W.J. - Waterhouse, J.H.** (1975), "Budgetary Control and Organisation Structure", Journal of Accounting Research, Autumn, pp. 177-203.

- **Bruns, W.J., Jr. - Merchant, K.A.** (1990), "The Dangerous Morality of Managing Earnings", Management Accounting, Vol. 72, No. 2, pp. 22-25.

- **Buchanan, D. - Huczynski, A.** (1997), "Organisational Behaviour : An Introductory Text", 3rd Edition, London : Prentice Hall.

- **Burns, T. - Stalker, G.M.** (1961), "The Management of Innovation", London : Tavistock.

- **Cable, J.R.** (1988), "Organizational Form and Economic Performance", in Thompson, S.-Wright, M. (Edition), "Internal Organisation, Efficiency and Profit", Chapter 2, Philip Allan.

- **Calder, B.J. - Staw, B.M.** (1975), "Self-Perception of Intrinsic and Extrinsic Motivation", Journal of Personality and Social Psychology, Vol. 31, pp. 599-605.

- **Campbell, D.T. - Stanley, J.C.** (1966), "Experimental and Quasi-experimental Designs for Research", Chicago : Rand McNally College Publishing Co.

- **Campbell, J.P. - Dunnette, M.D. - Lawler, E.E., III - Weick, K.E., Jr.** (1970), "Managerial Behavior, Performance and Effectiveness", New York : McGraw-Hill.

- **Campbell, J.P. - Pritchard, R.D.** (1976), "Motivation Theory in Industrial and Organizational Psychology", in Dunnette, M.D. (Edition), "Handbook of Industrial and Organizational Psychology", pp. 63-130, Chicago : Rand McNally.

- **Carmines, E.G. - Zeller, R.A.** (1979), "Reliability and Validity Assessments", Beverly Hills : Sage.

- **Carroll, S.J. - Tosi, H.L.** (1973), "Management by Objectives : Applications and Research", New York : Macmillan.

- **Caves, R.E.** (1980), "Industrial Organization, Corporate Strategy and Structure", Journal of Economic Literature", Vol. 18, pp. 64-92.

- **Centers, R. - Bugental, D.E.** (1966), "Intrinsic and Extrinsic Job Motivation Among Different Segments of the Working Population", Journal of Applied Psychology, Vol. 50, pp. 193-197.

- **Chandler, A.D., Jr.** (1962), "Strategy and Structure : Chapters in the History of the Industrial Enterprise", Cambridge, Massachusetts : M.I.T. Press.

- **Chandler, A.D., Jr.** (1977), "The Visible Hand : The Managerial Revolution in American Business", Cambridge : Harvard University Press, Belknap Press.

- **Chenhall, R. - Morris, D.** (1986), "The Impact of Structure, Environment, and Interdependence on the Perceived Usefulness of Management Accounting Systems", The Accounting Review, Vol. LXI, No. 1, January, pp. 16-35.

- **Chief Executive** (1979), "Management Bonuses : Do You Need Them ?", November, pp. 18-21.

- **Child, J.** (1972), "Organization Structure, Environment and Performance : The Role of Strategic Choice", Sociology, January, pp. 1-22.

- **Child, J.** (1975), "Managerial and Organizational Factors Associated with Company Performance - Part 2 : A Contingency Analysis", The Journal of Management Studies, February, pp. 12-27.

- **Chow, C.W.** (1983), "The Effects of Job Standard Tightness and Compensation Scheme on Performance : An Exploration of Linkages", The Accounting Review, Vol. 58, October, pp. 667-685.

- **Cofer, C.N. - Appley, M.H.** (1964), "Motivation : Theory and Research", New York : Wiley.

- **Coleman, J.S.** (1990), "Foundations of Social Theory", Cambridge, MA : Harvard University Press.

- **Collins English Dictionary** (1991), 3rd Edition, London : HarperCollins Publishers.

- **Collins, F.** (1978), "The Interaction of Budget Characteristics and Personality Variables with Budget Response Attitudes", The Accounting Review, Vol. 53, April, pp. 324-335.

- **Condry, J.C.** (1977), "Enemies of Exploration : Self-Initiated versus Other-Initiated Learning", Journal of Personality and Social Psychology, Vol. 35, pp. 459-477.

- **Cooper, G.L. - Makin, P.** (1984), "Psychology for Managers", London : The British Psychological Society / MacMillan Publishers Ltd.

- **Corbo, A. - Kleiner, B.H.** (1991), "How to Effectively Link Compensation with Performance", Industrial Management, Vol. 33, No. 3, May / June, pp. 21-22.

- **Cortina, J.M.** (1993), "What is Coefficient Alpha ? An Examination of Theory and Applications", Journal of Applied Psychology, Vol. 78, pp. 98-104.

- **Costello, T.W. - Zalkind, S.S.** (1963), "Psychology in Administration", Englewood Cliffs, New Jersey : Prentice-Hall.

- **Cronbach, L.J.** (1951), "Coefficient Alpha and the Internal Structure of Tests", Psychometrica, Vol. 13, No. 3, pp. 297-334.

- **Cummings, L.L. - Schwab, D.P.** (1973), "Performance in Organizations : Determinants and Appraisal", Westminster, Maryland : Scott Foresman.

- **Curtis, J.** (1998), "Play Your Cards Right", Marketing, January 15, pp. 20-21.

- **Cyert, R.M. - March, J.G.** (1963), "A Behavioral Theory of the Firm", Englewood Cliffs, N.J.: Prentice-Hall, Inc.

- **Daft, R.L. - MacIntosh, N.B.** (1978), "A New Approach to Design and Use of Management Information", California Management Review, Fall, pp. 82-92.

- **Daft, R.L. - MacIntosh, N.B.** (1981), "A Tentative Exploration into the Amount and Equivocality of Information Processing in Organizational Work Units", Administrative Science Quarterly, pp. 207-224.

- **Dalton, G.W.** (1971), "Motivation and Control in Organizations", in Dalton, G.W. - Lawrence, P.R. (Edition), "Motivation and Control in Organizations", pp. 1-35, Homewood, Ill. : Richard D. Irwin, and the Dorsey Press.

- **Dalton, M.** (1959), "Men Who Manage", New York : Wiley.

- **Daniels, J.D. - Radebaugh, L.H.** (1995), "International Business - Environments and Operations", 7th Edition, Reading : Addison-Wesley Publishing Company, Inc.

- **Darwin, C.** (1859), "Origins of Species", (1936 Edition), New York : Modern Library.

- **Davies, J.B.** (1997), "The Myth of Addiction : An Application of the Psychological Theory of Attribution to Illicit Drug Use", 2nd Edition, Amsterdam, Netherlands : Harwood Academic Publishers.

- **Dawes, R.M. - Corrigan, B.** (1974), "Linear Models in Decision Making", Psychological Bulletin, February, pp. 95-106.

- **de Vaus, D.A.** (1996), "Surveys in Social Research", 4th Edition, London : UCL Press Ltd.

- **Dearden, J.** (1961), "Problems in Decentralized Financial Control", Harvard Business Review, pp. 72-80.

- **Dearden, J.** (1962), "Limits on Decentralized Profit Responsibility", Harvard Business Review, July-August, pp. 81-89.

- **Dearden, J.** (1969), "The Case Against ROI Control", Harvard Business Review, Vol. 47, No. 3, pp. 124-135.

- **Deci, E.L. - Ryan, R.M.** (1980), "The Empirical Exploration of Intrinsic Motivational Processes", in Berkowitz, L. (Edition), "Advances in Experimental Social Psychology", Vol. 13, pp. 39-80, New York : Academic Press.

- **Deci, E.L. - Ryan, R.M.** (1985), "Intrinsic Motivation and Self-Determination in Human Behavior", New York : Plenum.

- **Deci, E.L. - Ryan, R.M.** (1987), "Intrinsic Motivation and Self-Determination in Human Behavior", 2nd Edition, New York : Plenum.

- **Deci, E.L.** (1971), "Effects of Externally Mediated Rewards on Intrinsic Motivation", Journal of Personality and Social Psychology, Vol. 18, pp. 105-115.

- **Deci, E.L.** (1972), "The Effects of Contingent and Non-Contingent Rewards and Controls on Intrinsic Motivation", Organizational Behavior and Human Performance, Vol. 22, pp. 113-120.

- **Deci, E.L.** (1975), "Intrinsic Motivation", New York : Plenum.

- **Deci, E.L.** (1992), "The History of Motivation in Psychology and its Relevance for Management", in Vroom, V.H. - Deci, E.L. (Edition), "Management and Motivation : Selected Readings", pp. 9-29, 2nd Edition, London : Penguin Books.

- **Demski, J. - Feltham, G.** (1978), "Economic Incentives in Budgetary Control Systems", The Accounting Review, Vol. 53, pp. 336-359.

- **Dermer, J.** (1977), "Management Planning and Control Systems : Advanced Topics and Cases", Irwin.

- **Descartes, R.** (1649), "Passions of the Soul", in Haldane, E.S. - Ross, G.R.T. (Edition), "Philosophical Works of Descartes", Cambridge : University Press.

- **Dill, W.R.** (1958), "Environment as an Influence on Managerial Autonomy", Administrative Science Quarterly, Vol. 2, pp. 409-443.

- **Dillard, J. - Fisher, J.** (1990), "Compensation Schemes, Skill Level and Task Performance : An Experimental Investigation", Decision Sciences, Vol. 21, pp. 121-137.

- **Donaldson, G.** (1984), "Managing Corporate Wealth : The Operations of a Comprehensive Financial Goals System", New York : Praeger.

- **Downey, H.K. - Hellriegel, D. - Slocum, J.W.** (1975), "Environmental Uncertainty : The Construct and Its Operationalization", Administrative Science Quarterly, December, pp. 613-629.

- **Downey, H.K. - Slocum, J.W.** (1975), "Uncertainty : Measures, Research and Sources of Variation", Academy of Management Journal, pp. 652-677.

- **Drucker, P.** (1964), "Control, Controls and Management" in Bonini, C.P. - Jaedicke, R.J. - Wagner, M.M. (Edition), "Management Controls : New Directions in Basic Research", Maidenhead, Berks : McGraw-Hill.

- **Drury, C. - Braund, S. - Osborne, P. - Tayles, M.** (1993), "A Survey of Management Accounting Practices in UK Manufacturing Companies", ACCA Research Occasional Paper, Chartered Association of Certified Accountants.

- **Drury, C.** (1996), "Management and Cost Accounting", 4th Edition, London : International Thomson Business Press.

- **Dunbar, R.L.M.** (1971), "Budgeting for Control", Administrative Science Quarterly, Vol. 16, March, pp. 88-96.

- **Duncan, R.B.** (1972), "Characteristics of Organizational Environments and Perceived Environmental Uncertainty", Administrative Science Quarterly, Vol.17, September, pp. 313-327.

- **Dunk, A.S.** (1989), "Budget Emphasis, Budgetary Participation and Managerial Performance : A Note", Accounting, Organizations and Society, Vol. 14, No. 4, pp. 321-324.

- **Dunnette, M.D. - Campbell, J.P. - Hakel, M.D.** (1967), "Factors Contributing to Job Satisfaction and Dissatisfaction in Six Occupational Groups", Organisational Behaviour and Human Performance, Vol. 2, pp. 143-174.

- **Easterby-Smith, M. - Thorpe, R. - Lowe, A.** (1996), "Management Research : An Introduction", London : SAGE Publications.

- **Eaton, J. - Rosen, H.S.** (1983), "Agency, Delayed Compensation, and the Structure of Executive Remuneration", Journal of Finance, XXXVIII, pp. 1489-1505.

- **Eccles, R.G.** (1991), "The Performance Measurement Manifesto", Harvard Business Review, January-February, pp. 131-137.

- **Edwards, W.** (1954), "The Theory of Decision Making", Psychological Bulletin, Vol. 51, pp.380-417.

- **Ehrenberg, R.G. - Milkovich, G.T.** (1987), "Compensation and Firm Performance", in Kleiner, M. et el. (Edition), "Human Resources and the Performance of the Firm", pp. 87-122, Madison : Industrial Relations Research Association, University of Wisconsin.

- **Emery, F.E. - Trist, E.J.** (1965), "The Causal Texture of Organizational Environments", Human Relations, Vol. 18, No. 1, pp. 21-32.

- **Emmanuel, C.R. - Mehafdi, M.** (1994), "Transfer Pricing", London : Academic Press Ltd.

- **Emmanuel, C.R. - Otley, D. - Merchant, K.** (1990), "Accounting for Management Control", 2nd Edition, London : International Thomson Business Press.

- **Emmanuel, C.R. - Otley, D.** (1985), "Accounting for Management Control", Van Nostrand Reinhold (U.K.).

- **Etzioni, A.** (1961), "A Comparative Analysis of Complex Organizations", Basingstoke, Hants : Free Press.

- **Etzioni, A.** (1988), "The Moral Dimension : Toward a New Economics", New York : Free Press.

- **Ewen, R.B. - Smith, P.C. - Hulin, C.L. - Locke, E.A.** (1966), "An Empirical Test of the Herzberg Two-Factor Theory", Journal of Applied Psychology, Vol. 50, pp. 544-550.

- **Ewusi-Mensah, K.** (1981), "The External Organizational Environment and its Impact on Management Information Systems", Accounting, Organizations and Society, Vol. 6, No. 4, pp. 301-316.

- **Ezzamel, M.** (1990), "The Impact of Environmental Uncertainty, Managerial Autonomy and Size on Budget Characteristics", Management Accounting Research, Vol. 1, pp. 181-197.

- **Fama, E.F. - Jehnsen, M.C.** (1983), "Separation of Ownership and Control", Journal of Law and Economics, Vol. 26, pp. 301-325.

- **Fama, E.F.** (1980), "Agency Problems and the Theory of the Firm", Journal of Political Economy, April, pp. 288-307.

- **Ferris, K.R. - Dillard, J.F. - Nethercott, L.** (1980), "A Comparison of V-I-E Model Predictions : A Cross-National Study in Professional Accounting Firms", Accounting, Organizations and Society, Vol. 5, No. 4, pp. 361-368.

- **Ferris, K.R.** (1977), "A Test of the Expectancy Theory of Motivation in an Accounting Environment", The Accounting Review, Vol. LII, No. 3, July, pp. 605-615.

- **Ferris, K.R.** (1977), "Perceived Uncertainty and Job Satisfaction in the Accounting Environment", Accounting, Organizations and Society, No. 2, pp.23-28.

- **Ferris, K.R.** (1978), "Perceived Environmental Uncertainty as a Mediator of Expectancy Theory Predictions : Some Preliminary Findings", Decision Sciences, Vol. 9, pp. 379-390.

- **Festinger, L.** (1954), "A Theory of Social Comparison Processes", Human Relations, Vol. 7, pp. 117-140.

- **Festinger, L.** (1957), "A Theory of Cognitive Dissonance", Evanston, Illinois : Row, Peterson.

- **Fink, A.** (1995), "The Survey Handbook", Thousand Oaks, California : SAGE Publications, Inc.

- **Flamholtz, E.G.** (1983), "Accounting, Budgeting, and Control Systems in Their Organizational Context : Theoretical and Empirical Perspectives", Accounting, Organizations and Society, No. 2/3, pp. 153-169.

- **Foulkes, F.K.** (1985), "Why Bonus Plans Are Good for Business", Personnel, Vol.62, pp. 72-73.

- **Foulkes, F.K.** (1991), "Executive Compensation : A Strategic Guide for the 1990s", Boston : Harvard Business School Press.

- **Fowler, F.J., Jr.** (1995), "Improving Survey Questions : Design and Evaluation", Applied Social Research Methods Series, Vol. 38, Thousand Oaks, California : Sage Publications, Inc.

- **Frank, A.G.** (1959), "Goal Ambiguity and Conflicting Standards : An Approach to the Study of Organization", Human Organization, Vol. 17, pp. 8-13.

- **Franko, L.G.** (1974), "The Move Toward a Multidivisional Structure in European Organization", Administrative Science Quarterly, December, pp. 493-506.

- **Frayne, C.A. - Latham, G.P.** (1987), "The Application of Social Learning Theory to Employee Self-Management of Attendance", Journal of Applied Psychology, Vol. 72, No. 3, pp. 387-392.

- **Fremgen, J.M. - Liao, S.S.** (1981), "The Allocation of Corporate Indirect Costs", New York : National Association of Accountants.

- **Freud, S.** (1925), "Instincts and their Viccitudes", in "Collected Papers", Vol. 4, pp. 60-83, London : Hogarth.

- **Frey, B.S.** (1992), "Economics as a Science of Human Behaviour", Boston and Dordrecht : Kluwer.

- **Frey, B.S.** (1997), "On the Relationship between Intrinsic and Extrinsic Work Motivation", International Journal of Industrial Organization, Vol. 15, No. 4, July, pp. 427-439.

- **Fry, L.W.** (1982), "Technology-Structure Research : Three Critical Issues", Academy of Management Journal, pp. 535-552.

- **Furnham, A. - Forde, L. - Ferrari, K.** (1999), "Personality and Work Motivation", Personality and Individual Differences, Vol. 26, No. 6, June, pp. 1035-1043.

- **Galbraith, J.R. - Cummings, L.L.** (1967), "An Empirical Investigation of the Motivational Determinants of Task Performance : Interactive Effects between Instrumentality-Valence and Motivation-Ability", Organizational Behavior and Human Performance, Vol. 2, August, pp. 237-257.

- **Galbraith, J.R.** (1977), "Organization Design", Reading, Massachusetts : Addison-Wesley Publishing Company.

- **Garland, H.** (1983), "Influence of Ability, Assigned Goals, and Normative Information on Personal Goals and Performance : A Challenge to the Goal Attainability Assumption", Journal of Applied Psychology, Vol. 68, pp. 20-30.

- **Gavin, J.F.** (1970), "Ability, Effort, and Role Perception as Antecedents of Job Performance", Experimental Publication System, Vol. 5, Ms. No. 190A, pp. 1-26.

- **Georgopoulos, B.S. - Mahoney, G.M. - Jones, N.W., Jr.** (1957), "A Path-Goal Approach to Productivity", Journal Applied Psychology, Vol. 41, No. 6, December, pp. 345-353.

- **Gill, J. - Johnson, P.** (1991), "Research Methods for Managers", London : Paul Chapman Publishing Ltd.

- **Gordon, L.A. - Larcker, D.F. - Tuggle, F.D.** (1978), "Strategic Decision Processes and the Design of Accounting Information Systems", Accounting, Organizations and Society, pp. 203-213.

- **Gordon, L.A. - Miller, D.** (1976), "A Contingency Framework for the Design of Accounting Information Systems", Accounting, Organizations and Society, Vol. 1, No. 1, pp. 59-69.

- **Gordon, L.A. - Narayanan, V.K.** (1984), "Management Accounting Systems, Perceived Environmental Uncertainty and Organization Structure : An Empirical Investigation", Accounting, Organizations and Society, Vol. 9, No. 1, pp. 33-47.

- **Gordon, M.J.** (1964), "The Use of Administered Price Systems to Control Large Organisations" in Bonini, C.P. - Jaedicke, R.J. - Wagner, M.M. (Edition), "Management Controls : New Directions in Basic Research", pp. 1-26, Maidenhead, Berks : McGraw-Hill.

- **Govindarajan, V. - Gupta, A.K.** (1985), "Linking Control Systems to Business Unit Strategy : Impact on Performance", Accounting, Organizations and Society, Vol. 10, No. 1, pp. 51-66.

- **Govindarajan, V.** (1984), "Appropriateness of Accounting Data in Performance Evaluation : An Empirical Examination of Environmental Uncertainty as an Intervening Variable", Accounting, Organizations and Society, Vol. 9, No. 2, pp. 125-135.

- **Govindarajan, V.** (1986), "Impact of Participation in the Budgetary Process on Managerial Attitudes and Performance : Universalistic and Contingency Perspectives", Decision Sciences, Vol. 17, Fall, pp. 496-516.

- **Govindarajan, V.** (1988), "A Contingency Approach to Strategy Implementation at the Business-Unit Level : Integrating Administrative Mechanisms with Strategy", Academy of Management Journal, Vol. 31, pp. 828-853.

- **Graen, G.B.** (1969), "Instrumentality Theory of Work Motivation : Some Experimental Results and Suggested Modifications", Journal of Applied Psychology Monograph, Vol. 53, No.2, Part 2, pp. 1-25.

- **Greene, J. - D'Oliveira, M.** (1982), "Learning to Use Statistical Tests in Psychology : A Student's Guide", Milton Keynes : Open University Press.

- **Gresov, C. - Drazin, R. - Van de Ven, A.H.** (1989), "Work-Unit Uncertainty, Design and Morale", Organization Studies, pp. 45-62.

- **Hackman, R.J. - Oldham, G.R. - Janson, R. - Purdy K.** (1975), "A New Strategy for Job Enrichment", California Management Review, Vol. 17, No. 4, pp. 57-71.

- **Hackman, R.J. - Oldham, G.R.** (1980), "Work Redesign", Reading, Massachusetts : Addison-Wesley.

- **Hackman, R.J. - Porter, L.W.** (1968), "Expectancy Theory Predictions of Work Effectiveness", Organizational Behavior and Human Performance, Vol. 3, November, pp. 417-426.

- **Halachmi, A. - Holzer, M.** (1987), "Merit Pay, Performance Targeting, and Productivity", Review of Public Personnel Administration, Vol. 7, No. 2, Spring, pp. 80-91.

- **Hall, C.S. - Lindzey, G.** (1957), "Theories of Personality", New York : Wiley.

- **Hall, D.T. - Nougaim, K.E.** (1968), "An Examination of Maslow's Need Hierarchy in the Organisational Setting", Organisational Behaviour and Human Performance, Vol. 3, pp.12-35.

- **Hamner, W.C.** (1974), "Reinforcement Theory and Contingency Management in Organisational Settings", in Tosi, H.L. - Hamner, W.C. (Edition), "Organizational Behavior and Management : A Contingency Approach", pp. 86-112, Chicago : St Clair Press.

- **Hamner, W.C.** (1975), "How to Ruin Motivation with Pay", Compensation Review, Vol. 7, pp. 17-27.

- **Hart, O. - Holmstrom, B.** (1987), "The Theory of Contracts", in Truman Bewley (Edition), "Advances in Economic Theory", Cambridge : Cambridge University Press.

- **Hartmann, F.G.H.** (1997), "Accounting for Performance Evaluation : Effects of Uncertainty on the Appropriateness of Accounting Performance Measures", Ph.D. Dissertation, Maastricht University.

- **Hayes, D.C.** (1977), "The Contingency Theory of Managerial Accounting", The Accounting Review, Vol. LII, No. 1, January, pp. 22-39.

- **Hays, W.L.** (1963), "Statistics for Psychologists", New York : Holt, Rinehart & Winston.

- **Hebb, D.O.** (1955), "Drives and C. N. S. (Conceptual Nervous System)", Psychological Review, Vol. 62, pp. 243-254.

- **Hebb, D.O.** (1958), "A Textbook of Psychology", Philadelphia : W.B. Saunders.

- **Hedlund, G.** (1994), "A Model of Knowledge Management and the N-form Corporation", Strategic Management Journal, Vol. 15, Summer, pp. 73-91.

- **Heider, F.** (1958), "The Psychology of Interpersonal Relations", New York : Wiley.

- **Heneman, H.G., III - Schwab, D.P.** (1972), "Evaluation of Research on Expectancy Theory Predictions of Employee Performance", Psychological Bulletin, July, Vol. 78, No. 1, pp. 1-9.

- **Heneman, H.G., III** (1974), "Comparisons of Self- and Superior Ratings of Managerial Performance", Journal of Applied Psychology, October, pp. 638-642.

- **Herzberg, F. - Mausner, B. - Peterson, R.O. - Capwell, D.F.** (1957), "Job Attitudes : Review of Research and Opinion", Pittsburgh : Psychological Service of Pittsburgh.

- **Herzberg, F. - Mausner, B. - Snyderman, B.** (1959), "The Motivation to Work", New York : Wiley.

- **Herzberg, F.** (1966), "Work and the Nature of Man", New York : World.

- **Herzberg, F.** (1968), "One More Time : How Do You Motivate Employees ?", Harvard Business Review, Vol. 46, No. 1, January-February, pp. 53-62.

- **Hettenhouse, G.W.** (1970), "Cost / Benefit Analysis of Executive Compensation", Harvard Business Review, XLVIII, July-August, pp. 114-124.

- **Hettenhouse, G.W.** (1971), "Compensation Cafeteria for Top Executives", Harvard Business Review, XLIX, September-October, pp. 113-119.

- **Hilgard, E.R. - Atkinson, R.C.** (1967), "Introduction to Psychology", New York : Harcourt, Brace & World.

- **Hill, C.W.L.** (1985), "Internal Organisation and Enterprise Performance : Some U.K. Evidence", Management and Decisions Economics, Vol. 6, pp. 210-216.

- **Hiromoto, T.** (1988), "Another Hidden Edge - Japanese Management Accounting", Harvard Business Review, July-August, pp. 22-26.

- **Hirst, M.K. - Lowy, S.** (1990), "The Linear Additive and Interactive Effects of Budgetary Goal Difficulty and Feedback on Performance", Accounting, Organizations and Society, Vol. 15, pp. 425-436.

- **Hirst, M.K.** (1981), "Accounting Information and the Evaluation of Subordinate Performance : A Situational Approach", The Accounting Review, Vol. 56, pp. 771-784.

- **Hirst, M.K.** (1983), "Reliance on Accounting Performance Measures, Task Uncertainty, and Dysfunctional Behavior : Some Extensions", Journal of Accounting Research, Vol. 21, No.2, pp. 596-605.

- **Hofstede, G.H.** (1968), "The Game of Budget Control", London : Tavistock.

- **Holloway, D.** (1990), "The Catastrophe and After", The New York Review of Books, 19 July, 5.

- **Holmstrom, B.** (1979), "Moral Hazard and Observability", Bell Journal of Economics, Spring.

- **Hom, P.W.** (1980), "Expectancy Predictions of Reenlistment in the National Guard", Journal of Vocational Behavior, Vol. 16, pp. 235-248.

- **Hopwood, A.G.** (1972), "An Empirical Study of the Role of Accounting Data in Performance Evaluation", Empirical Research in Accounting, Supplement to Journal of Accounting Research, Vol. 10, pp. 156-182.

- **Hopwood, A.G.** (1973), "An Accounting System and Managerial Behaviour", Westmead, Farnborough, Hants : Saxon House Ltd.

- **Hopwood, A.G.** (1974), "Accounting and Human Behaviour", London : Haymarket Publishing Ltd.

- **Hopwood, A.G.** (1976), "Accountancy and Human Behaviour", Prentice-Hall.

- **Hopwood, A.G.** (1978), "Towards an Organizational Perspective for the Study of Accounting and Information Systems", Accounting, Organizations and Society, pp. 3-13.

- **Horngren, C.T. - Foster, G.** (1987), "Cost Accounting : A Managerial Emphasis", 7th Edition, Prentice-Hall.

- **Horngren, C.T. - Sundem, G.L.** (1987), "Introduction to Management Accounting", 7th Edition, Prentice-Hall.

- **Horngren, C.T.** (1972), "Cost Accounting : A Managerial Emphasis", 3rd Edition, Englewood Cliffs, N.J. : Prentice-Hall.

- **Horngren, C.T.** (1982), "Cost Accounting : A Managerial Emphasis", 5th Edition, Englewood Cliffs, N.J. : Prentice-Hall.

- **House, R.J. - Wahba, M.A.** (1972), "Expectancy Theory in Industrial and Organizational Psychology : An Integrative Model and a Review of Literature", Proceedings of the 80th Annual Convention of the American Psychological Association, Vol. 7, pp. 465-476.

- **House, R.J.** (1971), "A Path Theory of Leader Effectiveness", Administrative Science Quarterly, Vol. 16, No. 3, pp. 321-338.

- **Howcroft, J.B. - Lavis, J.C.** (1987), "Retail Banking in the U.K. : A Change in Organizational Forms", Journal of Retail Banking, Vol. 9, No. 3, Fall, pp. 35-42.

- **Howell, W.C.** (1976), "Essentials of Industrial and Organisational Psychology", Illinois : The Dorsey Press.

- **Hull, C.L.** (1943), "Principles of Behaviour : An Introduction to Behaviour Theory", New York : Appleton-Century-Crofts.

- **Hunt, J.W.** (1992), "Managing People at Work", 3rd Edition, London : McGraw-Hill.

- **Ilgen, D.R. - Nebeker, D.M. - Prichard, R.D.** (1981), "Expectancy Theory Measures : An Empirical Comparison in an Experimental Simulation", Organizational Behavior and Human Performance, Vol. 28, pp. 189-223.

- **Imoisili, O.A.** (1985), "Task Complexity, Budget Style of Evaluating Performance and Managerial Stress : An Empirical Investigation", Unpublished Dissertation, Graduate School of Business, University of Pittsburgh.

- **Imoisili, O.A.** (1989), "The Role of Budget Data in the Evaluation of Managerial Performance", Accounting, Organizations and Society, Vol. 14, pp. 325-335.

- **Ivancevich, J.M. - Szilagyi, A.D., Jr. - Wallace, M.J., Jr.** (1977), "Organizational Behavior and Performance", Santa Monica, Cal. : Goodyear Publishing.

- **James, W.** (1890), "The Principles of Psychology", New York : Henry Holt.

- **Jensen, M.C. - Murphy, K.J.** (1988), "Performance, Pay and Top Management Incentives", Working Paper No. 88-059, Harvard Business School.

- **Jewell, L.N.** (1998), "Contemporary Industrial / Organizational Psychology", 3rd Edition, Pacific Grove : Brooks / Cole Publishing Company.

- **Jiambalvo, J.** (1979), "Performance Evaluation and Directed Job Effort : Model Development and Analysis in a CPA Firm Setting", Journal of Accounting Research, Vol. 17, No. 2, pp. 437-455.

- **Johnson, A.** (1999), "Should Options Reward Absolute or Relative Shareholder Returns ?", Compensation and Benefits Review, Vol. 31, No. 1, January-February, pp. 38-43.

- **Johnson, H. - Kaplan, R.** (1987), "Relevance Lost : The Rise and Fall of Management Accounting", Boston, MA : Harvard Business School Press.

- **Jones, C.S.** (1985), "An Empirical Study of the Evidence for Contingency Theories of Management Accounting Systems in Conditions of Rapid Change" Accounting, Organizations and Society, pp. 303-328.

- **Jones, M.R.** (1955), "Nebraska Symposium on Motivation", Lincoln : University of Nebraska Press.

- **Jorgenson, D.O. - Dunnette, M.D. - Pritchard, R.D.** (1973), "Effects of the Manipulation of a Performance-Reward Contingency on Behavior in a Simulated Work Setting", Journal of Applied Psychology, Vol. 57, pp. 271-280.

- **Journal of Accountancy** (1993), "Benefits & Compensation : Incentive Pay Plans Emphasize Non-Financial Measures", News Report, May, pp. 17-18.

- **Kahn, R.L.** (1958), "Human Relations on the Shop Floor", in Hugh-Jones, E.M. (Edition), "Human Relations and Modern Management", Amsterdam : North-Holland.

- **Kanfer, R.** (1990), "Motivation Theory and Industrial and Organisational Psychology", in Dunnette, M.D. - Hough, L.M. (Edition), "Handbook of Industrial and Organisational Psychology", 2nd Edition, Vol.1, pp. 75-170, Palo Alto, California : Consulting Psychologists Press, Inc.

- **Kaplan, R.S. - Norton, D.P.** (1992), "The Balanced Scorecard : Measures that Drive Performance", Harvard Business Review, January-February, pp. 71-79.

- **Kaplan, R.S. - Norton, D.P.** (1993), "Putting the Balanced Scorecard to Work", Harvard Business Review, September-October, pp. 134-147.

- **Kaplan, R.S. - Norton, D.P.** (1996), "The Balanced Scorecard", Boston, MA : Harvard University Press.

- **Kaplan, R.S.** (1982), "Advanced Management Accounting", Englewood Cliffs, New Jersey : Prentice-Hall Inc.

- **Karl, K.A. - Sutton, C.L.** (1998), "Job Values in Today's Workforce : A Comparison of Public and Private Sector Employees", Public Personnel Management, Vol. 27, No. 4, pp. 515-527.

- **Katz, D. - Kahn, R.L.** (1966), "The Social Psychology of Organisations", New York : Wiley.

- **Katzell, R.A. - Thompson, D.E.** (1990), "Work Motivation : Theory and Practice", American Psychologist, Vol. 45, pp. 144-153.

- **Keller, M.** (1989), "Rude Awakening : The Rise, Fall, and Struggle for Recovery of General Motors", New York : William Morrow.

- **Kenis, I.** (1979), "Effects of Budgetary Goal Characteristics on Managerial Attitudes and Performance", The Accounting Review, Vol. LIV, No. 4, October, pp. 707-721.

- **Khandwalla, P.N.** (1972), "The Effect of Different Types of Competition on the Use of Management Controls", Journal of Accounting Research, Vol. 10, Autumn, pp. 275-285.

- **Khandwalla, P.N.** (1977), "The Design of Organizations", New York : Harcourt Brace, Jovanovich.

- **Khojasteh, M.** (1993), "Motivating the Private Vs Public-Sector Managers", Public Personnel Management, Vol. 22, No. 3, pp. 391-401.

- **Kidder, H.K.** (1981), "Sellitz Wrightman & Cook's Research Methods in Social Relations", New York : Holt, Rinehart & Winston.

- **Kikoski, J.F.** (1999), "Effective Communication in the Performance Appraisal Interview : Face-to-Face Communication for Public Managers in the Culturally Diverse Workplace", Public Personnel Management, Vol. 28, No. 2, pp. 301-322.

- **Kirchner, W.K.** (1965), "Relationships Between Supervisory and Subordinate Ratings for Technical Personnel", Journal of Industrial Psychology, pp. 57-60.

- **Kohn, A.** (1987), "Incentives Can Be Bad for Business", Inc., January, pp. 93-94.

- **Kohn, A.** (1993), "Why Incentive Plans Cannot Work", Harvard Business Review, Vol.71, No.5, pp. 54-63.

- **Kohn, A.** (1993a), "Rethinking Rewards", Harvard Business Review, Vol.71, No.6, pp. 48-49.

- **Kopelman, R.E. - Reinharth, L.** (1982), "Research Results : The Effect of Merit-Pay Practices on White Collar Performance", Compensation Review, pp. 30-40.

- **Kopelman, R.E.** (1977), "Across-Individual, Within-Individual and Return-on-Effort Versions of Expectancy Theory", Decision Sciences, October, pp. 651-662.

- **Korman, A.K.** (1974), "The Psychology of Motivation", New Jersey : Prentice-Hall.

- **Krausz, E. - Miller, S.H.** (1974), "Social Research Design", London : Longman Group Limited.

- **Kren, L. - Liao, M.** (1988), "The Role of Accounting Information in the Control of Organizations : A Review of the Evidence", Journal of Accounting Literature, Vol.7, pp. 280-309.

- **Kren, L.** (1990), "Performance in a Budget-Based Control System : An Extended Expectancy Theory Model Approach", Journal of Management Accounting Research, Vol. 2, pp. 100-112.

- **Landy, F.J. - Trumbo, D.A.** (1980), "Psychology of Work Behaviour", Homewood, Illinois : The Dorsey Press.

- **Latham, G.P. - Baldes, J.J.** (1975), "The 'Practical Significance' of Locke's Theory of Goal Setting", Journal of Applied Psychology, Vol. 60, No. 1, pp. 122-124.

- **Latham, G.P. - Mitchell, T.R. - Dossett, D.L.** (1978), "The Importance of Participative Goal Setting and Anticipated Rewards on Goal Difficulty and Job Performance", Journal of Applied Psychology, Vol. 63, No. 2, pp. 163-171.

- **Latham, G.P. - Saari, L.M.** (1982), "The Importance of Union Acceptance for Productivity Improvement through Goal Setting", Personnel Psychology, Vol. 35, No. 4, pp. 781-787.

- **Lau, C.M. - Low, L.C. - Eggleton, I.R.C.** (1995), "The Impact of Reliance on Accounting Performance Measures on Job-Related Tension and Managerial Performance : Additional Evidence", Accounting, Organizations and Society, Vol. 20, No. 5, pp. 359-381.

- **Lau, C.M. - Low, L.C. - Eggleton, I.R.C.** (1997), "The Interactive Effect of Budget Emphasis, Participation and Task Difficulty on Managerial Performance : A Cross-Cultural Study", Accounting, Auditing & Accountability Journal, Vol. 10, No. 2, pp. 175-197.

- **Lauderman, M. - Schaeberle, F.W.** (1983), "The Cost Accounting Practices of Firms Using Standard Costs", Cost and Management (Canada), July-August, pp. 21-25.

- **Lavin, D.** (1994), "Chrysler Aides to Get Bonuses Equal to Salaries", Wall Street Journal, February 22, A3.

- **Lawler, E.E., III - Porter, L.W.** (1963), "Perceptions Regarding Management Compensation", Industrial Relations, Vol. 3, pp. 41-49.

- **Lawler, E.E., III - Porter, L.W.** (1967), "Antecedent Attitudes of Effective Managerial Performance", Organizational Behavior and Human Performance, Vol. 2, pp. 122-142.

- **Lawler, E.E., III - Rhode, J.G.** (1976), "Information and Control in Organisations", Santa Monica, California : Goodyear.

- **Lawler, E.E., III - Suttle, J.L.** (1972), "A Causal-Correlational Test of the Need Hierarchy Concept", Organisational Behaviour and Human Performance, Vol. 7, pp. 265-287.

- **Lawler, E.E., III - Suttle, J.L.** (1973), "Expectancy Theory and Job Behavior", Organizational Behavior and Human Performance, Vol. 9, pp. 482-503.

- **Lawler, E.E., III** (1965), "Managers' Perceptions of their Subordinates' Pay and of their Superiors' Pay", Personnel Psychology, Vol. 18, pp. 413-422.

- **Lawler, E.E., III** (1966), "Ability as a Moderator of the Relationship between Job Attitudes and Job Performance", Personnel Psychology, Vol. XIX, pp. 153-164.

- **Lawler, E.E., III** (1967), "Secrecy about Management Compensation : Are there Hidden Costs ?", Organizational Behavior and Human Performance, Vol. 2, pp. 182-189.

- **Lawler, E.E., III** (1968), "A Correlation-Causal Analysis of the Relationship between Expectancy Attitudes and Job Performance", Journal of Applied Psychology, Vol. 52, No. 6, pp. 462-468.

- **Lawler, E.E., III** (1971), "Pay and Organizational Effectiveness : A Psychological View", New York : McGraw-Hill, Inc.

- **Lawler, E.E., III** (1972), "Secrecy and the Need to Know", in Dunnette, M. - House, R. - Tosi, H. (Edition), "Readings in Managerial Motivation and Compensation", pp. 362-371, East Lansing : Michigan State University Press.

- **Lawler, E.E., III** (1973), "Motivation in Work Organizations", Monterey, Calif.: Brooks / Cole.

- **Lawler, E.E., III** (1974), "The Individualized Organization : Problems and Promise", California Management Review, Vol. 17, No. 2, pp. 31-39.

- **Lawler, E.E., III** (1976), "Control Systems in Organizations", in Dunnette, M.D. (Edition), "Handbook of Industrial and Organisational Psychology", Chicago : Rand McNally.

- **Lawler, E.E., III** (1981), "Pay and Organization Development", Reading, Massachusetts : Addison-Wesley Publishing Company, Inc.

- **Lawler, E.E., III** (1990), "Strategic Pay : Aligning Organizational Strategies and Pay Systems", San Francisco : Jossey-Bass Inc.

- **Lawler, E.E., III** (1994), "Motivation in Work Organizations", San Francisco : Jossey-Bass Inc., Publishers.

- **Lawrence, P.R. - Lorsch, J.W.** (1967), "Organization and Environment : Managing Differentiation and Integration", Boston, MA : Harvard University, Graduate School of Business Administration, Division of Research.

- **Lee, A.** (1998), "The Appropriateness of Reliance on Accounting Performance Measures : Is it a Case of Culture or Task Uncertainty ?", Working Paper, Norwegian School of Economics and Business Administration, Bergen.

- **Lepper, M.R. - Greene, D. - Nisbett, R.E.** (1973), "Undermining Children's Intrinsic Interest with Extrinsic Rewards : A Test of the "OverJustification" Hypothesis", Journal of Personality and Social Psychology, Vol. 28, pp. 129-137.

- **Lepper, M.R. - Greene, D.** (1978), "The Hidden Costs of Reward", Hillsdale, NJ : Erlbaum.

- **Levinson, H.** (1981), "Executive", Cambridge, Massachusetts : Harvard University Press.

- **Lewin, K.** (1935), "A Dynamic Theory of Personality", New York : McGraw-Hill.

- **Lewin, K.** (1936), "Principles of Topological Psychology", New York : McGraw Hill.

- **Lewin, K.** (1938), "The Conceptual Representation and the Measurement of Psychological Forces", Durham, NC : Duke University Press.

- **Lewis, P.** (1991), "Performance-Related Pay : Pretexts and Pitfalls", Employee Relations, Vol. 13, No. 1, pp. 12-16.

- **Licata, M.P. - Strawser, R.H. - Welker, R.B.** (1986), "A Note on Participation in Budgeting and Locus of Control", The Accounting Review, January, pp. 112-117.

- **Likert, R. - Seashore, S.E.** (1968), "Making Cost Control Work", in Solomons, D. (Edition), "Studies in Cost Analysis", Sweet and Maxwell.

- **Lindquist, T.** (1995), "Fairness as an Antecedent to Participative Budgeting : Examining the Effects of Distributive Justice, Procedural Justice and Referent Cognitions on Satisfaction and Performance", Journal of Management Accounting Research, Vol. 7, pp. 122-147.

- **Lindsay, R.M. - Ehrenberg, A.S.C.** (1993), "The Design of Replicated Studies", The American Statistician, Vol. 47, No. 3, pp. 217-228.

- **Locke, E.A. - Bryan, J.F. - Kendall, L.M.** (1968), "Goals and Intentions as Mediators of the Effects of Monetary Incentives on Behavior", Journal of Applied Psychology, pp. 104-121.

- **Locke, E.A. - Latham, G.P. - Erez, M.** (1988), "The Determinants of Goal Commitment", Academy of Management Review, Vol. 13, pp. 23-39.

- **Locke, E.A. - Latham, G.P.** (1990), "A Theory of Goal Setting and Task Performance", Englewood Cliffs, NJ : Prentice-Hall.

- **Locke, E.A. - Shaw, K.N. - Saari, L.M. - Latham, G.P.** (1981), "Goal Setting and Task Performance : 1969 - 1980", Psychological Bulletin, Vol. 90, pp. 125-152.

- **Locke, E.A.** (1968), "Toward a Theory of Task Motivation and Incentives", Organizational Behavior and Human Performance, Vol. 3, pp. 157-189.

- **Lowe, E.A. - Shaw, R.W.** (1968), "An Analysis of Managerial Biasing : Evidence of a Company's Budgeting Process", Journal of Management Studies, October, pp. 304-315.

- **Luce, S.R.** (1983), "Paying For Performance", Canadian Business Review, Vol.10, No.4, Winter, pp. 19-22.

- **Lyne, S.** (1995), "Accounting Measures, Motivation and Performance Appraisal", in Ashton, D. - Hopper, T. - Scapens, R.W. (Edition), "Issues in Management Accounting", 2nd Edition, pp. 237-257, London : Prentice Hall International (U.K.) Limited.

- **Macintosh, N.B.** (1981), "A Contextual Model of Information Systems", Accounting, Organizations and Society, Vol. 6, No. 1, pp. 39-53.

- **Macintosh, N.B.** (1994), "Management Accounting and Control Systems : An Organisational and Behavioural Approach", Chichester : John Wiley and Sons Ltd.

- **Madsen, K.B.** (1965), "Theories of Motivation : An Overview and a Synthesis", in Jones, M.R. (Edition), "Human Motivation : A Symposium", Lincoln : University of Nebraska Press.

- **Magee, R.P.** (1986), "Advanced Managerial Accounting", New York : Harper & Row.

- **Mahoney, T.A. - Jerdee, T.H. - Carroll, S.J.** (1963), "Development of Managerial Performance : A Research Approach", Cincinnati, OH : South-Western Publishing Co.

- **Mahoney, T.A. - Jerdee, T.H. - Carroll, S.J.** (1965), "The Jobs of Management", Industrial Relations, February, pp. 97-110.

- **Mahoney, T.A.** (1964), "Compensation Preferences of Managers", Industrial Relations, Vol. 3, pp. 135-144.

- **Maier, N.R.** (1955), "Psychology in Industry", 2nd Edition, Boston : Houghton-Mifflin.

- **Mann, M.** (1981), "Socio-logic", Sociology, Vol. 15, No. 4, pp. 544-550.

- **March, J.G. - Simon, H.A.** (1958), "Organizations", New York : John Wiley & Sons, Inc.

- **March, J.G.** (1972), "Model Bias in Social Action", Review of Educational Research, Vol. 42, No. 4, pp. 419-439.

- **Marriott, R.** (1957), "Incentive Payment Systems : A Review of Research and Opinion", London : Stapler Press.

- **Maslow, A.H.** (1943), "Motivation and Personality", New York : Harper.

- **Maslow, A.H.** (1954), "Motivation and Personality", New York : Harper.

- **Maslow, A.H.** (1970), "Motivation and Personality", 2nd Edition, New York : Harper & Row.

- **Matsui, T. - Ikeda, H.** (1976), "Effectiveness of Self-Generated Outcomes for Improving Prediction in Expectancy Theory Research", Organizational Behavior and Human Performance, Vol. 17, pp. 289-298.

- **Mauriel, J.J. - Anthony, R.N.** (1966), "Misevaluation of Investment Center Performance", Harvard Business Review, March / April, pp. 98-105.

- **McAdams, J.** (1993), "Rethinking Rewards", Harvard Business Review, Vol.71, No.6, pp. 43-44.

- **McBain, R.** (2000), "Human Resources Management : Team Diversity - Getting the best out of Teams", Manager Update, Vol. 11, No. 4, Summer, pp. 19-29.

- **McClelland, D.C. - Atkinson, J.W. - Clark, R.W. - Lowell, E.L.** (1953), "The Achievement Motive", New York : Appleton-Century-Crofts.

- **McClelland, D.C. - Winter, D.G.** (1969), "Motivating Economic Achievement", New York : Free Press.

- **McClelland, D.C.** (1961), "The Achieving Society", Princeton, N.J. : Van Nostrand.

- **McClurg, L.N.** (2001), "Team rewards : How far have we come ?", Human Resource Management, Vol. 40, No. 1, Spring, pp. 73-86.

- **McDougall, W.** (1908), "An Introduction to Social Psychology", London : Methuen.

- **Merchant, K.A. - Manzoni, J.F.** (1989), "The Achievability of Budget Targets in Profit Centers : A Field Study", The Accounting Review, Vol. LXIV, No. 3, July, pp. 539-558.

- **Merchant, K.A. - Simons, R.** (1986) "Research and Control in Complex Organisations : An Overview", Journal of Accounting Literature, Vol. 5, pp. 183-203.

- **Merchant, K.A.** (1981), "The Design of the Corporate Budgeting System : Influences on Managerial Behavior and Performance", The Accounting Review, Vol. LVI, No. 4, October, pp. 813-829.

- **Merchant, K.A.** (1983), "Leadership Styles and Uses of Budgeting", Working Paper No.83-49, Harvard University Graduate School of Business Administration.

- **Merchant, K.A.** (1984), "Influences on Departmental Budgeting : An Empirical Examination of a Contingency Model", Accounting, Organizations and Society, Vol. 9, pp. 291-310.

- **Merchant, K.A.** (1985), "Control in Business Organizations", Marshfield, Massachusetts : Pitman.

- **Merchant, K.A.** (1989), "Rewarding Results : Motivating Profit Center Managers", Boston, Massachusetts : Harvard Business School Press.

- **Merchant, K.A.** (1990), "The Effects of Financial Controls on Data Manipulation and Management Myopia", Accounting, Organizations and Society, Vol. 15, No. 4, pp. 297-313.

- **Meyer, H.H. - Kay, E. - French, J.R.P.** (1965), "Split Roles in Performance Appraisal", Harvard Business Review, Vol. 43, No. 1, pp. 123-129.

- **Mia, L. - Chenhall, R.H.** (1994), "The Usefulness of Management Accounting Systems, Functional Differentiation and Managerial Effectiveness", Accounting, Organizations and Society, Vol. 19, No. 1, pp. 1-13.

- **Mia, L.** (1989), "The Impact of Participation in Budgeting and Job Difficulty on Managerial Performance and Work Motivation : A Research Note", Accounting, Organizations and Society, Vol. 14, No. 4, pp. 347-357.

- **Milani, K.** (1975), "The Relationship of Participation in Budget-Setting to Industrial Supervisor Performance and Attitudes : A Field Study", The Accounting Review, April, pp. 274-284.

- **Milkovich, G.T. - Anderson, P.H.** (1972), "Management Compensation and Secrecy Policies", Personnel Psychology, Vol. 25, pp. 293-302.

- **Miller, S.** (1984), "Experimental Design and Statistics", 2nd Edition, London : Routledge.

- **Miner, J.B. - Dachler, H.P.** (1973), "Personnel Attitudes and Motivation", in Mussen, P.H. - Rosenzweig, M.R. (Edition), "Annual Review of Psychology", Vol. 24, pp. 379-402, Palo Alto, California : Annual Reviews.

- **Mintzberg, H.** (1975), "Impediments to the Use of Management Information", National Association of Accountants.

- **Mitchell, T.R. - Albright, D.W.** (1972), "Expectancy Theory Predictions of the Satisfaction, Effort, Performance, and Retention of Naval Aviation Officers", Organizational Behavior and Human Performance, Vol. 8, pp. 1-20.

- **Mitchell, T.R. - Biglan, A.** (1971), "Instrumentality Theories : Current Uses in Psychology", Psychological Bulletin, Vol. 76, No. 6, pp. 432-454.

- **Mitchell, T.R. - Nebeker, D.M.** (1973), "Expectancy Theory Predictions of Academic Effort and Performance", Journal of Applied Psychology, Vol. 57, pp. 61-67.

- **Mitchell, T.R.** (1974a), "Cognitions and Skinner : Some Questions about Behavioural Determinism", Paper presented at the National Academy of Management, Seattle.

- **Mitchell, T.R.** (1974b), "Expectancy Models of Job Satisfaction, Occupational Preference and Effort : A Theoretical, Methodological, and Empirical Appraisal", Psychological Bulletin, Vol. 81, No. 12, December, pp. 1053-1077.

- **Mitchell, T.R.** (1979), "Organizational Behavior", Annual Review of Psychology, pp. 243-281.

- **Mitchell, T.R.** (1982), "Expectancy-Value Models in Organizational Psychology", in Feather, N.R. (Edition), "Expectations and Actions : Expectancy-Value Models in Psychology", pp. 293-312, Hillsdale, NJ : Erlbaum.

- **Morgan, G. - Smircich, L.** (1980), "The Case for Qualitative Research", Academy of Management Review, Vol. 5, No. 4, pp. 491-500.

- **Mowday, R.T.** (1983), "Equity Theory Predictions of Behavior in Organisations", in Steers, R.M. - Porter, L.W. (Edition), "Motivation and Work Behavior", pp.91-113, New York : McGraw-Hill.

- **Mowen, J. - Middlemist, R. - Lutter, D.** (1981), "Joint Effects of Assigned Goal Level and Incentive Structure on Task Performance : A Laboratory Study", Journal of Applied Psychology, Vol. 66, pp. 598-603.

- **Mumford, E. - Banks, O.** (1967), "The Computer and the Clerk", London : Routledge & Kegan Paul.

- **Murlis, H.** (1988), "Merit Payment Systems : The Lessons So Far", Manpower Policy and Practice (UK), Spring, pp. 27-29.

- **Murphy, G.** (1947), "Personality : A Biosocial Approach to Origins and Structure", New York : Harper.

- **Murphy, T.** (1989), "Pay for Performance - An Instrument of Strategy", Long Range Planning, Vol. 22, No. 4, pp. 40-45.

- **Murray, H.A.** (1938), "Explorations in Personality", New York : Oxford University Press.

- **Nadler, D.A. - Lawler, E.E., III** (1977), "Motivation : A Diagnostic Approach", in Hackman, J.R.- Lawler, E.E., III - Porter, L.W. (Edition), "Perspectives on Behavior in Organizations", pp. 26-36, New York : McGraw-Hill.

- **Nakanishi, M.** (1989), "Group Motivation and Group Task Performance : The Expectancy-Valence Theory Approach", Small Group Behavior, Vol. 19, No. 1, pp. 35-55.

- **Nealey, S.M. - Owen, T.W.** (1970), "A Multitrait-Multimethod Analysis of Predictors and Criteria of Nursing Performance", Organizational Behavior and Human Performance, July, pp. 384-365.

- **Nelson, R.** (1999), "The Ironies of Motivation", Strategy & Leadership, Vol.27, No.1, January-February, pp. 26-31.

- **Nelson, R.** (1999a), "Top 10 Ironies of Employee Motivation Programs", Potentials, Vol. 32, No. 5, May, pp. 90-95.

- **Nessim, H. - Tanuja, S.** (1998), "Modelling the Motivational Antecedents of the Japanese Sales Force : How Relevant Are Western Models ?", Journal of Global Marketing, Vol. 11, No. 4, pp. 49-74.

- **New York Times** (1998), "Ford is Changing Bonus Program", March 26, C7(N).

- **Newman, W.H. - Warren, E.K. - McGill, A.R.** (1987), "The Process of Management", 6th Edition, Englewood Cliffs, New Jersey : Prentice-Hall.

- **Norusis, M.J.** (1994), "SPSS® Advanced Statistics 6.1", Chicago : SPSS Inc.

- **Norusis, M.J.** (1998), "SPSS® 8.0 Guide to Data Analysis", New Jersey : Prentice-Hall, Inc.

- **Notz, W.W.** (1975), "Work Motivation and the Negative Effects of Extrinsic Rewards : A Review with Implications for Theory and Practice", American Psychologist, Vol.30, pp. 884-891.

- **Nunnally, J.C. - Bernstein, I.H.** (1994), "Psychometric Theory", New York : McGraw-Hill.

- **Nunnally, J.C.** (1967), "Psychometric Theory", New York : McGraw-Hill.

- **Nunnally, J.C.** (1978), "Psychometric Theory", New York : McGraw-Hill.

- **Nunnally, J.C.** (1981), "Psychometric Theory", New Delhi : Tata McGraw-Hill.

- **Onsi, M.** (1973), "Factor Analysis of Behavioral Variables Affecting Budgetary Slack", The Accounting Review, pp. 535-548.

- **Oppenheim, A.N.** (1966), "Questionnaire Design and Attitude Measurement", New York : Basic Books.

- **Oppenheim, A.N.** (1992), "Questionnaire Design, Interviewing and Attitude Measurement", London : Pinter.

- **Opsahl, R.L. - Dunnette, M.D.** (1979), "The Role of Financial Compensation in Industrial Motivation", in Mahoney, T.A. (Edition), "Compensation and Reward Perspectives", pp. 79-88, Richard D. Irwin.

- **Otley, D.T. - Pierce, B.J.** (1996), "Auditor Time Budget Pressure : Consequences and Antecedents", Accounting, Auditing and Accountability Journal, Vol. 9, No. 1, pp. 31-58.

- **Otley, D.T.** (1978), "Budget Use and Managerial Performance", Journal of Accounting Research, Vol. 16, No. 1, Spring, pp. 122-149.

- **Otley, D.T.** (1980), "The Contingency Theory of Management Accounting : Achievement and Prognosis", Accounting, Organizations and Society, Vol. 5, No. 4, pp. 413-428.

- **Otley, D.T.** (1987a), "Budgeting for Management Control", Management Accounting (U.K.), May, pp. 20-21.

- **Otley, D.T.** (1987b), "Accounting Control and Organizational Behavior", William Heinemann Ltd.

- **Otley, D.T.** (1992), "United Bank : A Case Study on the Implementation of a Performance Related Scheme", in Bruns, W.J. (Edition), "Performance Measurement, Evaluation, and Incentives", Series in Accounting and Control, pp. 97-121, Chapter 4, Boston, Massachusetts : Harvard Business School Press.

- **Otley, D.T.** (1994), "Management Control in Contemporary Organizations : Towards a Wider Framework", Management Accounting Research, Vol. 5, pp. 289-299.

- **Otley, D.T.** (1995a), "Management Control, Organisational Design and Accounting Information Systems", in Ashton, D. - Hopper, T. - Scapens, R.W. (Edition), "Issues in Management Accounting", pp. 45-63, 2nd Edition, London : Prentice Hall International Ltd.

- **Otley, D.T.** (1995b), "Some Issues in Management Control", in Vagneur, K. - Wilkinson, C. - Berry, A.J. (Edition), "Beyond Constraint : Exploring the Management Control Paradox", pp. 1-3, Proceedings of the 3rd International Management Control System Symposium, The Management Control Association.

- **Ouchi, W.G.** (1977), "The Relationship between Organization Structure and Organization Control", Administrative Science Quarterly, March, pp. 95-113.

- **Parker, D.F. - Dyer, L.** (1976), "Expectancy Theory as a Within-Person Behavioral Choice Model : An Empirical Test of Some Conceptual and Methodological Refinements", Organizational Behavior and Human Performance, October, pp. 97-117.

- **Parker, J.W. - Taylor, E.K. - Barrett, R.S. - Martens, L.** (1959), "Rating Scale Content : III. Relationships Between Supervisory- and Self-Ratings", Personnel Psychology, Spring, pp. 49-63.

- **Parker, L.D.** (1979), "Divisional Performance Measurement : Beyond an Exclusive Profit Test", Accounting and Business Research, Vol. 36, pp. 309-319.

- **Peak, H.** (1955), "Attitude and Motivation", in Jones, M.R. (Edition), "Nebraska Symposium on Motivation", Lincoln, Nebr. : University of Nebraska Press.

- **Pearce, J.L.** (1987), "Why Merit Pay Doesn't Work : Implications from Organization Theory", in Balkin, D.B. - Gomez-Mejia (Edition), "New Perspectives on Compensation", pp. 169-178, Prentice-Hall.

- **Pecotich, A. - Churchill, G.A.** (1981), "An Examination of the Anticipated-Satisfaction and Importance Valence Controversy", Organizational Behavior and Human Performance, Vol. 27, pp. 213-226.

- **Pedhazur, E.J. - Pedhazur-Schmelkin, L.** (1991), "Measurement, Design and Analysis : An Integrated Approach", Hillsdale : Erlbaum.

- **Pennings, J.M.** (1993), "Executive Reward Systems : A Cross-National Comparison", Journal of Management Studies, Vol. 30, No. 2, March, pp. 261-280.

- **Perrow, C.** (1967), "A Framework for Comparative Organisational Analysis", American Sociological Review, Vol. 32, pp. 194-208.

- **Perrow, C.** (1970), "Organizational Analysis : A Sociological View", London : Tavistock.

- **Pettigrew, A.M.** (1970), "A Behavioral Analysis of an Innovative Decision", Unpublished Doctoral Dissertation, University of Manchester, England.

- **Pettigrew, A.M.** (1972), "Information as a Power Resource", Sociology, Vol. 6, pp. 187-204.

- **Pettigrew, A.M.** (1973), "The Politics of Organizational Decision Making", London : Tavistock.

- **Pfeffer, J.** (1978), "Organizational Design", A.H.M. Publishing.

- **Pfeffer, J.** (1981), "Power in Organizations", Pitman.

- **Podsakoff, P.M. - Organ, D.W.** (1986), "Self-Reports in Organisational Research : Problems and Prospects", Journal of Management, Vol. 12, pp. 531-544.

- **Porter, L.W. - Lawler, E.E., III - Hackman, J.R.** (1975), "Behavior in Organizations", New York : McGraw-Hill, Inc.

- **Porter, L.W. - Lawler, E.E., III** (1968), "Managerial Attitudes and Performance", Homewood, Ill.: Irwin-Dorsey.

- **Porter, L.W.** (1961), "A Study of Perceived Need Satisfactions in Bottom and Middle Management Jobs", Journal of Applied Psychology, Vol. 45, pp. 1-10.

- **Prien, E.P. - Liske, R.E.** (1962), "Assessments of Higher-Level Personnel : III. A Comparative Analysis of Supervisor Ratings and Incumbent Self-Ratings of Job Performance", Personnel Psychology, Summer, pp. 187-194.

- **Pritchard, R.D. - Campbell, J.P.** (1976), "Motivation Theory in Industrial and Organizational Psychology", in Dunnette, M.D. (Edition), "Handbook of Industrial Organizational Psychology", pp. 63-130, New York : Wiley.

- **Pritchard, R.D. - Curts, M.I.** (1973), "The Influence of Goal Setting and Financial Incentives on Task Performance", Organizational Behavior and Human Performance, pp. 175-183.

- **Pritchard, R.D. - DeLeo, P.J.** (1973), "Experimental Test of the Valence-Instrumentality Relationship in Job Performance", Journal of Applied Psychology, Vol. 57, pp. 264-270.

- **Pritchard, R.D. - Sanders, M.S.** (1973), "The Influence of Valence, Instrumentality, and Expectancy on Effort and Performance", Journal of Applied Psychology, Vol. 57, pp. 55-60.

- **Pugh, D.S. - Hickson, D.J.** (1976a), "Organisational Structure in its Context", The Aston Programme 1, Saxon House.

- **Pugh, D.S. - Hinings, C.R.** (1976b), "Organisational Studies : Extensions and Replications", The Aston Programme 2, Saxon House.

- **Pugh, D.S. - Payne, R.L.** (1977), "Organisational Behaviour in its Context", The Aston Programme 3, Saxon House.

- **Ramadan, S.** (1989), "The Rationale for Cost Allocation : A Study of UK Divisionalised Companies", Accounting and Business Research, Vol. 19, No. 77, Winter, pp. 31-37.

- **Rappaport, A.** (1999), "New Thinking on How to Link Executive Pay with Performance", Harvard Business Review, Vol. 77, No. 2, pp. 91-102.

- **Read, W.** (1959), "Factors Affecting Upward Communication at Middle Management Levels in Industrial Organizations", Unpublished Doctoral Dissertation, University of Michigan, USA.

- **Reece, J.S. - Cool, W.R.** (1978), "Measuring Investment Center Performance", Harvard Business Review, May / June, pp. 28-46 and 174-176.

- **Rees, W. - Sutcliffe, C.** (1994), "Quantitative Non-financial Information and Income Measures: The Case of Long-Term Contracts", Journal of Business Finance and Accounting, April, pp. 331-347.

- **Ridgway, V.F.** (1956), "Dysfunctional Consequences of Performance Measurement", Administrative Science Quarterly, Vol. 1, pp. 240-247.

- **Riggio, R.E. - Porter, L.W.** (1990), "Introduction to Industrial / Organisational Psychology", Harper Collins Publishers.

- **Rockness, H.O.** (1977), "Expectancy Theory in a Budgetary Setting : An Experimental Examination", The Accounting Review, Vol. 52, No. 4, October, pp. 893-903.

- **Ronan, W.W.** (1970), "Relative Importance of Job Characteristics", Journal of Applied Psychology, Vol. 54, pp. 192-200.

- **Ronen, J. - Livingstone, J.L.** (1975), "An Expectancy Theory Approach to the Motivational Impacts of Budgets", The Accounting Review, Vol. L, No. 4, pp. 671-685.

- **Rose, D. - Sullivan, O.** (1996), "Introducing Data Analysis for Social Scientists", 2nd Edition, Buckingham : Open University Press.

- **Rose, M.** (1997), "Spot The Differentials", People Management, Vol. 3, No. 14, July 10, pp. 44-45.

- **Rosenthal, R. - Rosnow, R.L.** (1991), "Essentials of Behavioral Research : Methods and Data Analysis", New York : McGraw-Hill.

- **Ross, A.** (1995), "Job Related Tension, Budget Emphasis and Uncertainty : A Research Note", Management Accounting Research, Vol. 6, pp. 1-11.

- **Ross, J. - Ferris, K.R.** (1979), "The Impact of Interpersonal Attraction on Organizational Outcomes", Working Paper.

- **Rossi, P.H. - Wright, J.D. - Anderson, A.B.** (1983), "Handbook of Survey Research", New York : Academic Press, Inc.

- **Rotter, J.B.** (1955), "The Role of the Psychological Situation in Determining the Direction of Human Behaviour", in Jones, M.R. (Edition), "Nebraska Symposium of Motivation", Lincoln, Nebr. : University of Nebraska Press.

- **Rotter, J.B.** (1966), "Generalised Expectancies for Internal versus External Control of Reinforcement", Psychological Monographs, Vol. 80, pp. 1-28.

- **Rugman, A.M. - Hodgetts, R.M.** (1995), "International Business : A Strategic Management Approach", New York : McGraw-Hill, Inc.

- **Rumelt, R.P.** (1974), "Strategy, Structure and Economic Performance", Division of Research, Graduate School of Business Administration, Harvard University.

- **Russell, G.H. - Black, K., Jr.** (1972), "Human Behavior in Business", New York : Prentice-Hall.

- **Salancik, G.R. - Pfeffer, J.** (1977), "An Examination of Need-Satisfaction Models of Job Attitudes", Administrative Science Quarterly, Vol. 22, pp. 427-456.

- **Samuels, J.M.** (1970), "Divisional Performance Measures and Interest on Capital : A Contributed Note", Journal of Business Finance, Vol. 1, pp. 3-4.

- **Sanchez, D.** (1999), "Putting Motivation Back in Incentives", Sales and Marketing Management, Vol. 151, No. 8, August, pp. 24-26.

- **Sathe, V.** (1974), "Structural Adaptation to Environment : Study of Insurance Company Departments and Branch Banks", Ph.D. Dissertation, Ohio State University.

- **Sathe, V.** (1978), "The Relevance of Modern Organization Theory for Managerial Accounting", Accounting, Organizations and Society, pp. 89-92.

- **Schiff, M. - Lewin, A.Y.** (1968), "Where Traditional Budgeting Fails", Financial Executive, May, pp. 57-62.

- **Schmidt, F.L.** (1973), "Implications of a Measurement Problem for Expectancy Theory Research", Organizational Behavior and Human Performance, Vol.10, pp. 243-251.

- **Schoonhoven, C.B.** (1981), "Problems with Contingency Theory : Testing Assumptions Hidden Within the Language of Contingency Theory", Administrative Science Quarterly, September, pp. 349-377.

- **Schuster, J.R. - Clark, B. - Rogers, M.** (1971), "Testing Portions of the Porter and Lawler Model Regarding the Motivational Role of Pay", Journal of Applied Psychology, Vol. 55, No. 3, pp. 187-195.

- **Schwab, D.P. - Olian-Gottlieb, J.D. - Heneman, H.G., III** (1979), "Between-Subjects Expectancy Theory Research : A Statistical Review of Studies Predicting Effort and Performance", Psychological Bulletin, Vol. 86, pp. 139-147.

- **Shapiro, C. - Stiglitz, J.E.** (1984), "Equilibrium Unemployment as a Worker Discipline Device", American Economic Review, Vol. 74, June, pp. 433-444.

- **Sheard, J.L.** (1970), "Intrasubject Prediction of Preferences for Organizational Types", Journal of Applied Psychology, Vol. 54, pp. 248-252.

- **Shillinglaw, G.** (1977), "Managerial Cost Accounting", 4th Edition, Irwin.

- **Shillinglaw, G.** (1982), "Managerial Cost Accounting", 5th Edition, Irwin.

- **Siegel, S. - Castellan, N.J., Jr.** (1988), "Nonparametric Statistics for the Behavioral Sciences", 2nd Edition, New York : McGraw-Hill Book Company.

- **Simon, H.A.** (1957), "Models of Man, Social and Rational", New York : John Wiley & Sons, Inc.

- **Simons, R. - Weston, H.** (1990), "IBM : Make It Your Business", Case Study 9-190-137, Boston : Harvard Business School.

- **Simons, R.** (1989), "General Electric : Compliance Systems", Case Study 1-189-081, Boston : Harvard Business School.

- **Simons, R.** (1995), "Levers of Control : How Managers Use Innovative Control Systems to Drive Strategic Renewal", Boston, Massachusetts : Harvard Business School Press.

- **Singer, M.S. - Coffin, M.S.** (1996), "Cognitive and Volitional Determinants of Job Attitudes in a Voluntary Organisation", Journal of Social Behavior and Personality, Vol. 11, No. 2, pp. 313-328.

- **Singleton-Green, B.** (1993), "If It Matters, Measure It", Accountancy, May, pp. 52-53.

- **Skinner, B.F.** (1953), "Science and Human Behaviour", New York : Macmillan.

- **Skinner, R.C.** (1990), "The Role of Profitability in Divisional Decision Making and Performance", Accounting and Business Research, Spring, pp. 135-141.

- **Solomons, D.** (1965), "Divisional Performance : Measurement and Control", Irwin.

- **Spector, P.E.** (1981), "Research Designs", Sage University Paper Series on Quantitative Applications in the Social Sciences, Series No. 07-023, Beverly Hills : Sage Publications, Inc.

- **Stedry, A.C. - Kay, E.** (1966), "The Effects of Goal Difficulty on Performance : A Field Experiment", Behavioral Science, Vol. 11, No. 6, November, pp. 459-470.

- **Stedry, A.C.** (1960), "Budget Control and Cost Behavior", Englewood Cliffs, New Jersey : Prentice-Hall.

- **Steers, R.M. - Porter, L.W.** (1979), "Motivation and Work Behavior", 2nd Edition, New York : McGraw-Hill Book Company.

- **Steers, R.M.** (1975), "Problems in the Measurement of Organisational Effectiveness", Administrative Science Quarterly, pp. 546-558.

- **Stewart, G.B.** (1993), "Rethinking Rewards", Harvard Business Review, Vol.71, No.6, pp. 37-38.

- **Stigler, G.J. - Becker, G.S.** (1977), "De Gustibus Non Est Disputandum", American Economic Review, Vol. 67, March, pp. 76-90.

- **Stiglitz, J.E.** (1987), "The Design of Labor Contracts : The Economics of Incentives and Risk Sharing", in Nalbantian H.R. (Edition), "Incentives, Cooperation and Risk Sharing", Totowa, New Jersey : Rowman and Littlefield.

- **Swieringa, R.J. - Moncur, R.H.** (1972), "The Relationship between Manager's Budget Oriented Behavior and Selected Attitudes, Position, Size, and Performance Measure", Supplement to the Journal of Accounting Research, pp. 194-209.

- **Tannenbaum, A.S.** (1962), "Control in Organizations : Individual Adjustment and Organizational Performance", Administrative Science Quarterly, Vol. 1, pp. 236-257.

- **Terborg, J.R. - Miller, H.E.** (1978), "Motivation, Behavior and Performance : A Closer Examination of Goal Setting and Monetary Incentives", Journal of Applied Psychology, pp. 29-39.

- **Tharp, C.G.** (1986), "Linking Annual Incentives and Individual Performance", Personnel Administrator, Vol. 31, No. 1, January, pp. 85-89.

- **Thomas, A.L.** (1971), "Transfer Prices of the Multinational Firm : When Will They Be Arbitrary ?", Abacus, June, pp. 40-53.

- **Thomas, A.L.** (1980), "A Behavioural Analysis of Joint-Cost Allocation and Transfer Pricing", Stipes.

- **Thompson, J.D.** (1967), "Organizations in Action - Social Science Base of Administrative Theory", New York : McGraw-Hill Book Company.

- **Thorndike, E.L.** (1911), "Animal Intelligence : Experimental Studies", New York : Macmillan.

- **Thorndike, E.L.** (1913), "The Psychology of Learning", New York : Teacher's College, Columbia University.

- **Thornton, G.C.** (1980), "Psychometric Properties of Self-Appraisals of Job Performance", Personnel Psychology, Summer, pp. 263-271.

- **Tolman, E.C.** (1932), "Purposive Behaviour in Animals and Men", New York : Century.

- **Tomassini, L.A.** (1976), "Behavioral Research on Human Research Accounting : A Contingency Framework", Accounting, Organizations and Society, pp. 239-250.

- **Tomkins, C.** (1973), "Financial Planning in Divisionalized Companies", Haymarket.

- **Tosi, H.** (1975), "The Human Effects of Managerial Budgeting Systems", in Livingstone, J.L. (Edition), "Managerial Accounting : The Behavioral Foundations", Columbus, Ohio : Grid.

- **Troland, L.T.** (1928), "The Fundamentals of Human Motivation", New York : Van Nostrand.

- **Tubbs, M.E. - Boehne, D.M. - Paese, P.W.** (1991), "An Empirical Comparison of Several Commonly Used Measures of Valence", Journal of Psychology, Vol. 125, pp. 707-721.

- **Turney, J.R.** (1974), "Activity Outcome Expectancies and Intrinsic Activity Values as Predictors of Several Motivation Indexes for Technical-Professionals", Organizational Behavior and Human Performance, Vol. 11, February, pp. 65-82.

- **Umapathy, S.** (1987), "Current Budgeting Practices in U.S. Industry : The State of the Art", New York : Quorum Books.

- **Uyterhoeven, H.E.R.** (1972), "General Managers in the Middle", Harvard Business Review, Vol. 50, March-April, pp. 75-85.

- **Vagneur, K. - Wilkinson, C. - Berry, A.J.** (1995), "Beyond Constraint : Exploring the Management Control Paradox", pp. iii-v, Proceedings of the 3rd International Management Control System Symposium, The Management Control Association.

- **Van Eerde, W. - Thierry, H.** (1996), "Vroom's Expectancy Models and Work-Related Criteria : A Meta-Analysis", Journal of Applied Psychology, Vol. 81, No. 5, pp. 575-586.

- **Vancil, R.F.** (1979), "Decentralization : Managerial Ambiguity by Design", Homewood, Illinois : Dow Jones-Irwin.

- **Venkatraman, N. - Ramanujam, V.** (1987), "Measurement of Business Economic Performance : An Examination of Method Convergence", Journal of Management, Spring, pp. 109-122.

- **Vernon-Harcourt, T.** (1987), "Charterhouse Top Management Remuneration : United Kingdom 1987-1988", Saffron Walden : Monks.

- **Viteles, M.S.** (1953), "Motivation and Morale in Industry", New York : W.W. Norton.

- **Vroom, V.H. - Deci, E.L.** (1992), "Management and Motivation : Selected Readings", 2nd Edition, London : Penguin Books.

- **Vroom, V.H.** (1964), "Work and Motivation", New York : John Wiley and Sons, Inc.

- **Waller, W. - Chow, C.** (1985), "The Self-Selection and Effort Effects of Standard-Based Employment Contracts : A Framework and some Empirical Evidence", The Accounting Review, Vol. 60, pp. 458-476.

- **Walsh, F.J., Jr.** (1987), "Measuring Business-Unit Performance", Research Bulletin No. 206, New York : The Conference Board, Inc.

- **Wanous, J.P. - Keon, T.L. - Latack, J.C.** (1983), "Expectancy Theory and Occupational / Organizational Choices : A Review and Test", Organizational Behavior and Human Performance, Vol. 32, pp. 66-86.

- **Wanous, J.P.** (1972), "Occupational Preferences : Perceptions of Valence and Instrumentality and Objective Data", Journal of Applied Psychology, Vol. 56, pp. 152-155.

- **Waterhouse, J.H. - Tiessen, P.** (1978), "A Contingency Framework for Management Accounting Systems Research", Accounting, Organisations and Society, Vol.3, No.1, pp. 65-76.

- **Watson, D.J.H.** (1975), "Contingency Formulations of Organizational Structure : Implications for Management Accounting", in Livingstone, J.L. (Edition), "Managerial Accounting : The Behavioral Foundations", pp. 65-80, Grid.

- **Weick, K.E.** (1969), "The Social Psychology of Organizing", Reading, MA : Addison-Wesley.

- **Weisberg, H.F. - Krosnick, J.A. - Bowen, B.D.** (1989), "An Introduction to Survey Research and Data Analysis", 2nd Edition, Glenview, Illinois : Scott, Foresman and Company.

- **White, R.W.** (1959), "Motivation Reconsidered : The Concept of Competence", Psychological Review, Vol. 66, pp. 297-333.

- **Williamson, O.E.** (1964), "The Economics of Discretionary Behaviour", Prentice-Hall.

- **Williamson, O.E.** (1970), "Corporate Control and Business Behavior", Englewood Cliffs, N.J.: Prentice-Hall.

- **Williamson, O.E.** (1975), "Markets and Hierarchies : Analysis and Antitrust Implications", New York : The Free Press.

- **Williamson, O.E.** (1985), "The Economic Institutions of Capitalism : Firms, Markets and Relational Contracting", Free Press.

- **Wilson, S.R.** (1973), "Motivating Managers with Money", Business Horizons, XVI, April, pp. 37-43.

- **Withey, M. - Daft, R.L. - Cooper, W.H.** (1983), "Measures of Perrow's Work Unit Technology : An Empirical Assessment and a New Scale", Academy of Management Journal, Vol. 26, No. 1, pp. 45-63.

- **Wofford, J.C.** (1971), "The Motivational Bases of Job Satisfaction and Job Performance", Personnel Psychology, Vol. 24, pp. 501-518.

- **Woodward, J.** (1965), "Industrial Organisation : Theory and Practice", Oxford : U.P.

- **Woodworth, R.** (1918), "Dynamic Psychology", New York : Columbia University Press.

- **Yin, T.** (1992), "Sears is Accused of Billing Fraud at Auto Centers", The Wall Street Journal, June 16, B1.

- **Young, P.T.** (1961). "Motivation and Emotion : A Survey of the Determinants of Human and Animal Activity", New York : Wiley.

- **Young, S.M.** (1996), "Survey Research in Management Accounting : A Critical Assessment", in Richardson, A.J. (Edition), "Research Methods in Accounting", Vancouver : CGA Research Foundation.